LEPIDOPTERA HETEROCERA

IN

THE BRITISH MUSEUM.

PART II.

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Ent.

ILLUSTRATIONS

OF

TYPICAL SPECIMENS

OF

LEPIDOPTERA HETEROCERA

IN

THE COLLECTION

OF

THE BRITISH MUSEUM.

Part II.—By ARTHUR GARDINER BUTLER.

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PREFACE.

THE second part of this Work is devoted to illustrations of types of Japanese Moths in the British Museum.

The fauna of Japan, on account of its mixture of European, Indian, and North-American forms, has always claimed the special attention of zoologists interested in the facts of geographical distribution. As regards Moths, European forms are predominant, many species being most closely allied to those of Europe, and, singularly, some forming links between species hitherto found in Europe only.

The study of these Lepidoptera has been greatly facilitated by the acquisition of the large collection made at Yokohama by Mr. F. M. Jonas, and of two smaller series selected from the collections formed by Mr. Henry Pryer in 1875 in the vicinity of the same locality, and by Mr. Henry Whitely at Hakodaté in the year 1866.

The descriptions of this second part have been prepared by Mr. A. G. Butler, F.L.S., one of the Senior Assistants in the Department of Zoology.

ALBERT GÜNTHER,

Keeper of the Department of Zoology.

British Museum, March 15, 1878.

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ILLUSTRATIONS

OF

TYPE SPECIMENS

OF

LEPIDOPTERA HETEROCERA.

SPHINGIDÆ.

HEMARIS, *Dalman.*

Hemaris radians. (Plate XXI. fig. 2.)

Sesia radians, *Walker, Cat. Lep. Het.* viii. p. 84. n. 8 (1856).

Wings hyaline white, with chocolate-brown borders; the outer border of primaries broad and internally dentated; veins blackish; secondaries with the costal and abdominal borders bright ochreous: head above olivaceous, whitish at the sides; thorax ochraceous; abdomen ochraceous, banded with black; pectus and palpi cream-coloured, legs and venter blackish: primaries below ochreous at the base. Expanse of wings 1 inch 11 lines to 2 inches 1 line.

Shanghai (*Fortune*); Yokohama (*Jonas*).

Hemaris alternata. (Plate XXI. fig. 3.)

Sesia alternata, *Butler, Ann. & Mag. Nat. Hist.* ser. 4, vol. xiv. p. 366 (1874).

Allied to the preceding species, but the wings more broadly bordered with brown, and the secondaries with the abdominal border grey, instead of bright ochreous; the banding of the abdomen is also slightly different. Expanse 1 inch 11 lines to 2 inches 3 lines.

Hakodaté (*Whitely*); Yokohama (*Jonas*).

MACROGLOSSA, *Ochsenheimer.*

Macroglossa saga. (Plate XXI. fig. 1.)

Macroglossa saga, *Butler, Ent. Month. Mag.* vol. xiv. p. 206 (1878).

Body and primaries dark slaty grey, with dark brown bands and spots as in *M. corythus*;

abdomen with similar lateral yellow spots; secondaries black-brown, with a broad central yellow belt: under surface ferruginous, with the usual dusky borders and lines; abdominal border of secondaries ochreous; palpi white, pectus whitish; venter fuliginous, with white marginal dots and two triangular flesh-coloured patches at the base. Expanse of wings 2 inches 5 lines.

Yokohama (*Jonas*).

PERGESA, *Walker*.

Pergesa mongoliana. (Plate XXI. fig. 5.)

Pergesa mongoliana, *Butler, Proc. Zool. Soc.* p. 622 (1875); *Trans. Zool. Soc.* vol. ix. p. 637, larva and pupa figured pl. xci. figs. 14, 15 (1876).

Primaries above olivaceous, with a grey outer border; a subapical patch and one or two spots on the disk pale testaceous; a black spot at apex of costa, and a large black spot on the inner margin near the external angle: secondaries olivaceous, with a dark brown border, an ochraceous spot at anal angle; thorax olivaceous, with white margin; abdomen pale brown: disk of the primaries below and nearly the whole of the secondaries mottled with rose-red and speckled with black; body below whitish, rosy at the sides. Expanse of wings 2 inches 2 lines.

Nankow Pass (*Swinhoe*); Yokohama (*Jonas*).

This species also occurs at Nagasaki.

TRIPTOGON, *Bremer*.

Triptogon piceipennis. (Plate XXI. fig. 4.)

Triptogon piceipennis, *Butler, Ann. & Mag. Nat. Hist.* ser. 4, vol. xx. p. 393 (1877).

Allied to *T. sperchius*, but the primaries much greyer, all the lines well-defined, the central ones less divergent; the secondaries of the male deep piceous or purplish brown, with the usual black-spotted pale anal patch; body darker, with a dark central longitudinal crest. Expanse of wings, ♂ 4 inches 6 lines, ♀ 4 inches 11 lines.

Yokohama (*Jonas*).

HYLOICUS, *Hübner*.

Hyloicus caligineus. (Plate XXI. fig. 6.)

Hyloicus caligineus, *Butler, Ann. & Mag. Nat. Hist.* ser 4, vol. xx. p. 393 (1877).

Allied to *H. pinastri*, but dark smoky grey, without the white markings on the body or the lateral black spots on the abdomen; the secondaries and the bands on the primaries smoky brown, the two longitudinal black dashes on these wings shorter and more linear. Expanse of wings, ♂ 2 inches 8 lines, ♀ 3 inches 2 lines.

Yokohama (*Jonas*).

AGARISTIDÆ.

SEUDYRA, *Stretch.*

Seudyra noctuina. (Plate XXII. fig. 1.)

Seudyra noctuina, *Butler*, *Ent. Month. Mag.* vol. xiv. p. 206 (1878).

Primaries above blackish, spotted with black; veins pale; an angular creamy white abbreviated belt beyond the cell; outer border rosy, with submarginal and marginal ferruginous lines; fringe white, intersected by a blackish line: secondaries ochreous, with a central black spot and a submarginal black band, margin and fringe nearly as in primaries: body above greyish; abdomen banded with black, ochreous at the sides, greyish below: wings below ochreous, with reddish outer borders; primaries with three and secondaries with two central black spots. Expanse of wings 1 inch 10 lines.

Hakodaté (*Whitely*).

MIMEUSEMIA, *Butler.*

Mimeusemia persimilis. (Plate XXII. fig. 2.)

Mimeusemia persimilis, *Butler*, *Ann. & Mag. Nat. Hist.* ser. 4, vol. xv. p. 397 (1875).

Primaries black, crossed by two or three plumbaginous lines; a spot near the base, two across the centre of the wing and two before apex, sulphur-yellow; secondaries deep orange, with broad costal and external black-brown borders, a large black spot across the end of the cell, and a second touching the outer border; thorax black, spotted with pale sulphur-yellow; abdomen orange, banded with black; primaries below with the internal area greyish; secondaries with the subcostal area cream-coloured; otherwise as above. Body below orange, varied with black. Expanse of wings 2 inches 3 lines.

Hakodaté (*Whitely*).

This species nearly resembles *Eusemia villicoides* (*Chelonomorpha japana* of Motschulsky).

VITHORA, *Moore.*

Vithora agrionides. (Plate XXII. fig. 3.)

Vithora agrionides, *Butler*, *Ann. & Mag. Nat. Hist.* ser. 4, vol. xv. p. 137 (1875).

Wings subhyaline white, the borders, veins, and a zigzag discal belt black; thorax dark brown, laterally streaked in front with yellow; collar yellow; abdomen ochre-yellow, with a dorsal series of dark brown spots and a lateral series of smaller spots, below with two parallel series of large spots. Expanse of wings 2 inches 5–6 lines.

Hakodaté (*Whitely*); Yokohama (*Jonas*).

ZYGÆNIDÆ.

ZYGÆNA, *Fabricius.*

Zygæna niphona. (Plate XXI. fig. 9.)

Zygæna niphona, *Butler, Ann. & Mag. Nat. Hist.* ser. 4, vol. xx. p. 393 (1877).

Primaries dull metallic green, crossed by three oblique patches, each formed of two carmine spots; secondaries carmine, with blackish fringe; thorax dull greenish; abdomen purplish, with a broad antepenultimate carmine belt. Expanse of wings 1 inch 3–5 lines.

Yokohama (*Jonas*).

PROCRIS, *Fabricius.*

Procris esmeralda. (Plate XXI. fig. 8.)

Procris esmeralda, *Butler, Ann. & Mag. Nat. Hist.* ser. 4, vol. xx. p. 394 (1877).

Primaries shining emerald-green, more golden at basal and costal areas, fringe smoky grey; secondaries smoky grey, semitransparent, fringe opaque; antennæ and thorax emerald-green; abdomen blackish, dull green at the sides: body below dull green; primaries below smoky grey, the apex and costa dark green; secondaries as above. Expanse of wings 11 lines.

Yokohama (*Jonas*).

NORTHIA, *Walker.*

Northia tenuis. (Plate XXI. fig. 7.)

Northia tenuis, *Butler, Ann. & Mag. Nat. Hist.* ser. 4, vol. xx. p. 394 (1877).

Wings greyish hyaline, the veins and margins black; antennæ steel-blue, with black pectinations: body black, thorax spotted with steel-blue scales; abdomen with the margins of the segments and anal extremity metallic green; venter wholly green; wings below with a blue spot at the base; proboscis yellow. Expanse of wings 1 inch 2 lines.

Yokohama (*Jonas*); Hakodaté (*Whitely*); Hong-Kong (*Bowring*).

ARCTIIDÆ.

SPILARCTIA, *Butler.*

Spilarctia imparilis. (Plate XXII. fig. 4.)

Spilarctia imparilis, *Butler, Ann. & Mag. Nat. Hist.* ser. 4, vol. xx. p. 394 (1877).

♂. Above smoky brown, spotted with black; head whitish; back of collar, margins of eyes and abdomen golden orange, the latter with dorsal and lateral black spots; tegulæ with a black spot; body below whity brown. Expanse of wings 1 inch 10 lines.

Yokohama (*Jonas*).

DIACRISIA, *Hübner*.

Diacrisia subvaria. (Plate XXIII. fig. 3.)

Diacrisia subvaria, *Walker, Cat. Lep. Het.* iii. p. 637. n. 2 (1855).

Primaries above buff-coloured; a black spot in the cell; two black spots at the end of the cell and between them a small red spot, below which is an oval brown spot crossed by yellow veins; four blackish spots on the fringe: secondaries rose-red, spotted with black; fringe yellow: head above and thorax pale buff; abdomen rose-red, with a dorsal row of black spots: under surface of wings and body rose-red, spotted with black; pectus brownish. Expanse of wings 1 inch 6 lines.

North China (*Cuming*); Hakodaté (*Whitely*); Yokohama (*Jonas*).

Mr. Walker's measurement of the wings is incorrect.

RHYPARIOIDES, *Butler*.

Rhyparioides nebulosa. (Plate XXIII. fig. 2.)

Rhyparioides nebulosa, *Butler, Ann. & Mag. Nat. Hist.* ser. 4, vol. xx. p. 396 (1877).

Primaries sordid buff, more or less clouded with grey; secondaries bright rose-red, with black spots, as in *Rhyparia purpurea*; thorax sordid buff; abdomen rose-red, with dorsal and lateral series of black spots; under surface nearly the same as in *R. purpurea*. Expanse of wings 2 inches 1 line.

Yokohama (*Jonas*); Hakodaté (*Whitely*).

Allied to the European genus *Rhyparia*.

LITHOSIIDÆ.

MILTOCHRISTA, *Hübner*.

Miltochrista pulchra. (Plate XXII. fig. 6.)

Miltochrista pulchra, *Butler, Ann. & Mag. Nat. Hist.* ser. 4, vol. xx. p. 396 (1877).

Primaries ochraceous, covered with scarlet spots and streaks, and crossed by four series of black dots, the first and third series well defined and arched, the fourth composed of small linear dashes; two black dots at the base; secondaries pink, deepest in colour externally, fringe whitish; thorax rosy, dotted with black; abdomen pink: primaries below bright rose-colour, without spots. Expanse of wings 1 inch 3 lines.

Yokohama (*Jonas*).

Miltochrista aberrans. (Plate XXII. fig. 7.)

Miltochrista aberrans, *Butler, Ann. & Mag. Nat. Hist.* ser. 4, vol. xx. p. 397 (1877).

Allied to *M. miniata* of Europe, but with three black basal dots and two slender crossed

lines upon the basal area, the irregular discal line more acutely dentated, and the series of black spots beyond it more elongated. Expanse of wings 1 inch.

Yokohama (*Jonas*).

Miltochrista rosaria. (Plate XXII. fig. 8.)

Miltochrista rosaria, *Butler*, *Ann. & Mag. Nat. Hist.* ser. 4, vol. xx. p. 397 (1877).

Close to *M. miniata*, but differing in the ε-shaped subbasal line of primaries, which is followed by a sharply defined transverse irregular black line; secondaries almost white. Expanse of wings 1 inch.

Yokohama (*Jonas*).

Miltochrista calamina. (Plate XXII. fig. 10.)

Miltochrista calamina, *Butler*, *Ann. & Mag. Nat. Hist.* ser. 4, vol. xx. p. 396 (1877).

Primaries stramineous, deepest at the costal and external borders, a dot at the base, a second at the end of the cell, and an irregular discal series black; the base of costa, an irregular subbasal transverse line, and a deeply indented postmedian line brown; secondaries paler than the primaries: body whitish, the head and collar stramineous; a black dot on the shoulders: primaries below with the base of costa blackish, a dash in the cell and a blurred band beyond it grey; five subapical black dots: body below stramineous. Expanse of wings 11 lines.

Yokohama (*Jonas*).

MELANÆMA, *Butler*.

Melanæma venata. (Plate XXII. fig. 5.)

Melanæma venata, *Butler*, *Ann. & Mag. Nat. Hist.* ser. 4, vol. xx. p. 397 (1877).

Wings above cream-coloured; primaries with the base of the costa and a spot near the base black; veins deep slate-colour; costal and outer borders broadly rosy; secondaries with the veins grey, outer border slightly rosy; thorax and anus rosy, the remainder of the abdomen cream-colour: wings below nearly as above, but more uniform in colouring; body below ochraceous; legs banded with black; venter dotted with brown. Expanse of wings 1 inch 4 lines.

Yokohama (*Jonas*).

LITHOSIA, *Fabricius*.

Lithosia adaucta. (Plate XXIII. fig. 6.)

Lithosia adaucta, *Butler*, *Ann. & Mag. Nat. Hist.* ser. 4, vol. xx. p. 398 (1877).

Primaries above shining grey, with stramineous costal border; fringe whitish; secondaries pale stramineous; thorax grey; head and collar stramineous; abdomen whitish, with pale

stramineous margin: primaries below grey, with costal and outer borders stramineous; secondaries as above; body pale stramineous. Expanse of wings 1 inch 9 lines.

Hakodaté (*Whitely*).

Lithosia pavescens. (Plate XXIII. fig. 5.)

Lithosia pavescens, *Butler*, *Ann. & Mag. Nat. Hist.* ser. 4, vol. xx. p. 398 (1877).

Nearly allied to *L. helveola* of Europe, but the wings pale buff, the secondaries with paler abdominal margin; the fringe whitish instead of yellow. Expanse of wings 1 inch 2 lines.

Hakodaté (*Whitely*).

Lithosia lævis. (Plate XXII. fig. 12.)

Lithosia lævis, *Butler*, *Ann. & Mag. Nat. Hist.* ser. 4, vol. xx. p. 398 (1877).

Much larger than *L. helveola*; the wings opaque pinky whitish, with a well-defined ochraceous outer border; primaries below brownish, with the costal and outer margins ochraceous; secondaries stramineous, becoming ochraceous towards the base of the costal and the apex of the outer margin. Expanse of wings 1 inch 6 lines.

Yokohama (*Jonas*).

ŒONISTIS, *Hübner*.

Œonistis dives. (Plate XXII. fig. 11.)

Œonistis dives, *Butler*, *Ann. & Mag. Nat. Hist.* ser. 4, vol. xx. p. 398 (1877).

Nearly allied to *Œ. quadra* of Europe, but the primaries of a much deeper colour, the male with the external sericeous border of less than half the width and of a deep leaden-grey colour; the female with longer bright-orange primaries; the secondaries paler in both sexes. Expanse of wings, ♂ 1 inch 9 lines, ♀ 1 inch 10 lines.

Yokohama (*Jonas*).

ÆMENE, *Walker*.

Æmene fasciata. (Plate XXII. fig. 9.)

Æmene fasciata, *Butler*, *Ann. & Mag. Nat. Hist.* ser. 4, vol. xx. p. 399 (1877).

Primaries white, crossed in the centre by an irregular grey band, bounded on each side by a series of black spots; the base of the costa, some spots on basal area, an imperfect discal series, and two or three marginal spots black: secondaries grey, the fringe white with a central brownish spot; body white, spotted in front with black. Wings below grey, with white fringe, a dusky spot at the end of the discoidal cell; primaries with two and secondaries with one spot on the fringe; body whity brown, legs grey. Expanse of wings 11 lines.

Yokohama (*Jonas*); Hakodaté (*Whitely*).

EUGOA, *Walker*.

Eugoa grisea. (Plate XXIII. fig. 1.)

Eugoa grisea, *Butler*, *Ann. & Mag. Nat. Hist.* ser. 4, vol. xx. p. 399 (1877).

Primaries above silver-grey; three blackish costal spots, a >-shaped blackish marking on the internal area, and several scattered black dots; margin slenderly blackish; fringe sordid white; secondaries pale brown: primaries below smoky brown, immaculate; secondaries below pale brown; body whitish, legs greyish in front. Expanse of wings 1 inch 2 lines.

Yokohama (*Jonas*).

PTERODECTA, *Butler*.

Pterodecta gloriosa. (Plate XXIII. fig. 4.)

Pterodecta gloriosa, *Butler*, *Ann. & Mag. Nat. Hist.* ser. 4, vol. xx. p. 399 (1877).

Wings above dark olive-brown; fringes red, intersected by a blackish line; primaries with the costa reddish, flecked with pink; a broad discal bisinuated arched belt of brilliant scarlet, orange towards the costa; body dark brown, reddish in front and below. Primaries below varied with ferruginous yellow and black; two black-edged white spots in the cell, and a large one at the end of the cell; discal belt brighter and more suffused with yellow than above; a large lilacine apical crescent-shaped spot: secondaries ferruginous, irregularly banded and striated with a deeper shade of the same colour; three black spots near the base; a central streak of yellow dots, in which is a yellow-edged spot; tips of the veins and a marginal line at apex pink: legs whitish, mottled with brown. Expanse of wings 1 inch 10 lines.

Yokohama (*Jonas*).

NYCTEMERIDÆ.

PSYCHOGOËS, *Butler*.

Psychogoës aterrima. (Plate XXIII. fig. 8.)

Psychogoës aterrima, *Butler*, *Ann. & Mag. Nat. Hist.* ser. 4, vol. xx. p. 400 (1877).

Shining black; primaries with an oblique abbreviated white band; secondaries with the fringe white: primaries below with greyish basal area, the white band not abbreviated; secondaries greyish towards the base and with grey abdominal margin; an angulated central grey line, dotted below the middle with white; fringe white: body below grey, the legs and abdomen banded with white. Expanse of wings 1 inch 7 lines.

Yokohama (*Jonas*).

PSYCHOSTROPHIA, *Butler*.

Psychostrophia melanargia. (Plate XXIII. fig. 7.)

Psychostrophia melanargia, *Butler, Ann. & Mag. Nat. Hist.* ser. 4, vol. xx. p. 401 (1877).

♂. Primaries shining purplish brown; a large cuneiform discoidal patch, an obliquc postmedian band, a little dash on the inner margin, and three large spots on the external area ochraceous; secondaries ochraceous, with a subcostal streak from the base and a broad angular external border shining purplish brown; a bifid apical spot and a submarginal anal zigzag belt ochreous; fringe with a white patch near the apex of each wing; body blackish, banded with yellow: wings below paler than above, the bands rather wider; body pale creamy yellow. Expanse of wings 1 inch 7 lines.

Yokohama (*Jonas*).

CHALCOSIIDÆ.

PIDORUS, *Walker*.

Pidorus atratus. (Plate XXIII. fig. 9.)

Pidorus atratus, *Butler, Ann. & Mag. Nat. Hist.* ser. 4, vol. xx. p. 401 (1877).

Near to *P. glaucopis*, but smaller and much darker, the white belt of primaries generally wider, always more oblique and with a straight external edge; apex of primaries below without bluish scales. Expanse of wings 1 inch 11 lines to 2 inches 1 line.

Hakodaté (*Whitely*), Yokohama (*Jonas*).

LAURION, *Walker*.

Laurion remota. (Plate XXIII. fig. 10.)

Eterusia remota, *Walker, Cat. Lep. Het.* ii. p. 431. n. 7 (1854).

Primaries fuliginous brown, with a white postmedian belt; secondaries white, with a broad external dark-brown border and an interrupted greyish oblique central belt, which joins the outer border at the anal angle; antennæ steel-blue; vertex of head and collar crimson; thorax black, with purplish reflections; abdomen dull metallic greenish; legs streaked with whitish internally: venter with whitish belts; wings below as above. Expanse of wings 2 inches 2 lines.

North China (*Cuming*); Yokohama (*Jonas*).

LIPARIDÆ.

LEUCOMA, *Stephens*.

Leucoma auripes. (Plate XXIV. fig. 1.)

Leucoma auripes, *Butler, Ann. & Mag. Nat. Hist.* ser. 4, vol. xx. p. 402 (1877).

♂. Allied to *L. vau-nigra* of Europe, but larger, without the black line on the disco-

cellulars of primaries, the costal area of the same wings dusky, the veins clothed with silvery scales; the antennæ longer, with a black belt near the base and with black pectinations; the front legs bright yellow, and the tarsi of the other legs testaceous. Expanse of wings 2 inches 6 lines.

Yokohama (*Jonas*).

ARTAXA, *Walker*.

Artaxa intensa. (Plate XXIII. fig. 12.)

Artaxa intensa, *Butler, Ann. & Mag. Nat. Hist.* ser. 4, vol. xx. p. 402 (1877).

Primaries golden yellow, with a central angulated, whitish-bordered, brown-speckled band; fringe sericeous; secondaries bright ochraceous, with whitish costal area, fringe pale yellow; body yellow, prothorax and centre of tegulæ whitish: wings below creamy whitish, more or less ochraceous beyond the middle, immaculate. Expanse of wings, ♂ 1 inch 3 lines, ♀ 1 inch 7 lines.

Yokohama (*Jonas*).

AROA, *Walker*.

Aroa jonasii. (Plate XXIII. fig. 11.)

Aroa jonasii, *Butler, Ann. & Mag. Nat. Hist.* ser. 4, vol. xx. p. 402 (1877).

Primaries pale sulphur-yellow, a large pale-centred brown spot at the end of the cell, a reddish brown spot at apex from which two small spots run obliquely downwards; secondaries sericeous white, yellowish externally: body white, the collar and metathorax pale sulphur-yellow; head and pectinations of antennæ dull orange; palpi, tibiæ, and tarsi ochreous: wings below pale sulphur-yellow; primaries with ochreous costa, sordid orange at apex; secondaries with a small ochreous discocellular lunule. Expanse of wings 1 inch 6–11 lines.

Yokohama (*Jonas*).

LYMANTRIA, *Hübner*.

Lymantria fumida. (Plate XXIV. fig. 4.)

Lymantria fumida, *Butler, Ann. & Mag. Nat. Hist.* ser. 4, vol. xx. p. 402 (1877).

♀. Allied to *L. dispar* of Europe; primaries covered with fuliginous scales, which become more sparse towards the outer margin; the lunated discal lines nearer together, the innermost one barely distinguishable, the second indistinct, the third consisting of broad lunate fuliginous spots; secondaries pale sandy yellowish, with a broad submarginal pale brown belt; no marginal spots: thorax speckled with fuliginous; abdomen pale sandy yellow, the terminal segments bordered with pink: wings below sordid sandy yellowish, with pale greyish submarginal belt; discocellular spot of secondaries blackish. Expanse of wings 2 inches 10 lines.

Yokohama (*Jonas*).

Lymantria aurora. (Plate XXIV. fig. 5.)

Lymantria aurora, *Butler, Ann. & Mag. Nat. Hist.* ser. 4, vol. xx. p. 403 (1877).

♀. Primaries above greyish white, pink at the base, with two zigzag basal blackish lines, the centre of the wing and outer border crossed by lunated dusky belts; a grey spot in the cell and a marginal series of blackish spots; secondaries pale pink, brightest at abdominal margin, a spot at the end of the cell and a submarginal band grey, margin spotted with black: thorax white; abdomen pink, with white anal segments; margins of eyes, palpi, and legs rose-red; femora and tibiæ grey below; tibiæ and tarsi banded with black. Wings below greyish, with pink margins and dusky marginal spots. Expanse of wings 3 inches 2 lines.

Yokohama (*Jonas*).

DASYCHIRA, *Stephens.*

Dasychira lunulata. (Plate XXIV. fig. 8.)

Dasychira lunulata, *Butler, Ann. & Mag. Nat. Hist.* ser. 4, vol. xx. p. 403 (1877).

♂. Primaries silvery white, irrorated with black, crossed by two irregular blackish lines; a subconfluent series of submarginal blackish lunules: secondaries fuliginous grey; a dusky spot at the end of the cell, and two dusky stripes parallel to the outer margin; outer border white, with a marginal series of blackish spots: body white, thorax greyish; abdomen with dusky transverse belts; antennæ with ferruginous pectinations. Wings below sordid white, with a black spot at the end of each discoidal cell; a discal forked dusky stripe; longitudinal subcostal and median streaks also dusky. Expanse of wings 2 inches 1 line.

Yokohama (*Jonas*).

NOTODONTIDÆ.

PHALERA, *Hübner.*

Phalera sigmata. (Plate XXIV. fig. 9.)

Phalera sigmata, *Butler, Ann. & Mag. Nat. Hist.* ser. 4, vol. xx. p. 473 (1877).

♂. Primaries above white, irrorated with black, brown, and yellow; a patch of raised white scales closing the cell, and followed by an oblique lunulated brown line; a discal series of brown-edged, raised white spots, followed by an indistinct greyish belt; a series of black Σ-shaped markings along the outer margin: secondaries fuliginous brown, darker externally, and ochraceous at abdominal margin: thorax white, mottled with blackish scales; abdomen testaceous, with whitish anal segments; antennæ ferruginous, with testaceous pectinations. Wings below testaceous clouded with brown; body testaceous. Expanse of wings 2 inches 5 lines.

♂, Yokohama (*Jonas*); ♀, Hakodaté (*Whitely*).

BIRETA, *Walker*.

Bireta pallida. (Plate XXV. figs. 10 & 11.)

Bireta pallida, *Butler, Ann. & Mag. Nat. Hist.* ser. 4, vol. xx. p. 473 (1877).

Primaries pale stramineous, with a large pale brownish internal patch, reaching to the first median branch, and a longitudinal streak of the same colour through the end of the cell; an oblique rounded spot of the ground-colour on the lower discocellular; an oblique sinuated postmedian line, followed below the third median branch by an oblique line; an oblique apical dash; a submarginal series of minute brown dots: secondaries whitish, clouded with pale brown: under surface creamy white, the primaries clouded with brown. Expanse of wings, ♂ 1 inch 11 lines, ♀ 2 inches.

Yokohama (*Jonas* and *Pryer*).

DICRANURA, *Boisduval*.

Dicranura felina. (Plate XXIV. fig. 3.)

Dicranura felina, *Butler, Ann. & Mag. Nat. Hist.* ser. 4, vol. xx. p. 474 (1877).

Wings semihyaline white, with black marginal spots and dark brown veins; primaries crossed by blackish lines and spots, somewhat as in *D. vinula* and *D. erminia*; the marginal spots elongated into abbreviated longitudinal lines: secondaries with dusky discocellulars: thorax spotted with black; abdomen banded with blackish. Expanse of wings, ♂ 2 inches 5 lines, ♀ 2 inches 8 lines.

Yokohama (*Jonas*).

Differs from both the European species in the more deeply waved discal lines, and from *D. vinula* in its white secondaries.

PERIDEA, *Stephens*.

Peridea gigantea. (Plate XXIV. fig. 6.)

Peridea gigantea, *Butler, Ann. & Mag. Nat. Hist.* ser. 4, vol. xx. p. 474 (1877).

Wings above greyish brown; primaries with a broad, nearly central, pale patch from the costa to the median vein, continued as an ill-defined streak below the first median branch, and terminating in a <-shaped marking; orbicular and reniform spots represented by 8-shaped markings and enclosed in the pale patch; basal area to the submedian vein crossed by a testaceous streak, intersected and margined by dusky zigzag lines; a whitish costal spot beyond the cell, followed by whitish dots on each of the nervures; two or three subapical whitish lunules: secondaries whitish, a broad dusky discal band and a central line parallel to it; apex and one or two subapical spots whitish: tegulæ bordered with black; a black annulus on metathorax; abdomen brown. Below sandy whitish; secondaries with two indistinct parallel central greyish lines. Expanse of wings 2 inches 7 lines.

Yokohama (*Jonas*).

HUPODONTA, *Butler.*

Hupodonta corticalis. (Plate XXIV. fig. 7.)

Hupodonta corticalis, *Butler, Ann. & Mag. Nat. Hist.* ser. 4, vol. xx. p. 475 (1877).

Primaries pale brown, clouded and streaked with darker brown, two pale dashes in a dusky patch beyond the cell; costa black-spotted; a black internal dash; disk crossed by a grey zigzag line dotted with black; outer border first dark brown, followed by a sinuated whitish line, then lilacine, intersected by a submarginal series of black 3-shaped markings and edged with black; fringe pale brown, with a darker outer edge: secondaries grey, crossed by pale streaks and lines, edged with dark brown towards anal angle. Primaries below greyish brown, with the interno-median area and outer border paler; secondaries whity brown, crossed by an arched dusky belt, and with basicostal and anal dusky dashes. Expanse of wings 2 inches.

Yokohama (*Jonas*).

GONOCLOSTERA, *Butler.*

Gonoclostera latipennis. (Plate XXVII. fig. 2.)

Gonoclostera latipennis, *Butler, Ann. & Mag. Nat. Hist.* ser. 4, vol. xx. p. 476 (1877).

Primaries greyish brown, crossed by two diverging lines, a broad triangular patch enclosed by the lines and becoming gradually darker towards the centre of the wing, apical area dusky: secondaries paler brown, the costal area very light; an indication of a light, discal, transverse, arched line: thorax dark brown, abdomen rather paler. Under surface decidedly paler, with two central, dusky, transverse lines; primaries with the base and a subapical costal spot whitish; secondaries and margins of venter whity brown. Expanse of wings 1 inch 4 lines.

Yokohama (*Jonas*).

GELASTOCERA, *Butler.*

Gelastocera exusta. (Plate XXIV. fig. 2.)

Gelastocera exusta, *Butler, Ann. & Mag. Nat. Hist.* ser. 4, vol. xx. p. 476 (1877).

Primaries ferruginous, with a broad central piceous band, widest on inner margin; external area sordid testaceous; secondaries whitish, slightly ferruginous at outer margin; head and thorax reddish: antennæ brown, abdomen whitish. Under surface whitish, with a few scattered ferruginous scales; centre of primaries greyish. Expanse of wings 1 inch 3 lines.

Hakodaté (*Whitely*).

LIMACODIDÆ.

MONEMA, *Walker.*

Monema flavescens. (Plate XXV. fig. 5.)

Monema flavescens, *Walker*, *Cat. Lep. Het.* v. p. 1112. n. 1 (1855).

Yellow; primaries crossed by two slender convergent brown lines; external half from the inner line bright red-brown; secondaries somewhat testaceous; palpi dark brown. Expanse of wings 1 inch 5 lines.

North China (*Cuming*); Yokohama (*Jonas*).

The type is so much faded that its true coloration is scarcely distinguishable.

DREPANULIDÆ.

ORETA, *Walker.*

Oreta turpis. (Plate XXV. fig. 8.)

Oreta turpis, *Butler*, *Ann. & Mag. Nat. Hist.* ser. 4, vol. xx. p. 477 (1877).

Pale shining brown, external area sprinkled with black atoms; fringe dark chocolate-brown: primaries crossed obliquely by two greyish lines, blackish towards apex; a short apical plumbaginous streak; the costa at apex and the fringe in the subapical sinus black; secondaries with the costal area pale, apical area rather dark: thorax reddish brown; abdomen pale brown, anal tuft yellowish. Under surface testaceous, speckled here and there with grey; fringe brown. Expanse of wings 1 inch 4 lines.

Yokohama (*Jonas*).

Oreta calida. (Plate XXV. fig. 6.)

Oreta calida, *Butler*, *Ann. & Mag. Nat. Hist.* ser. 4, vol. xx. p. 477 (1877).

Laky brown, mottled with black; wings crossed by two central blackish lines, the outer one bounded by a yellow line which runs to apex, and is followed by a brown streak; apex greyish, with black margin; fringe dark brown; extremity of the cell more or less dusky: secondaries with dark brown fringe; female with a discal series of black dots, outer border ferruginous. Under surface bright reddish tawny, spotted with grey, and crossed by a grey discal stripe, which is angulated near the costa of primaries; legs red. Expanse of wings, ♂ 1 inch 8 lines, ♀ 2 inches.

Yokohama (*Jonas*), Hakodaté (*Whitely*).

Oreta pulchripes. (Plate XXV. fig. 7.)

Oreta pulchripes, *Butler, Ann. & Mag. Nat. Hist.* ser. 4, vol. xx. p. 477 (1877).

Sordid testaceous: wings bordered and clouded with rosy lilacine, margined with ferruginous and mottled and striated with grey; primaries with two or three costal spots and one near the external angle blackish, crossed by two oblique irregular grey lines, the outer one bordered externally by a bright yellow line, terminating, near the apex, in an ochraceous patch; a large ferruginous spot at the end of the cell, enclosing a plumbaginous marking: head bright yellow; palpi, frons, and front coxæ scarlet; collar greyish; abdomen yellow. Under surface cadmium-yellow, densely irrorated with red; primaries mottled with grey, and with a grey submarginal streak; secondaries with a central red streak; legs clothed with scarlet hair. Expanse of wings 1 inch 6–7 lines.

Yokohama (*Jonas*).

Oreta calceolaria. (Plate XXV. fig. 4.)

Oreta calceolaria, *Butler, Ann. & Mag. Nat. Hist.* ser. 4, vol. xx. p. 478 (1877).

Sulphur-yellow; wings with central band, basal area, external border of primaries, and a few scales at apex of secondaries reddish brown, mottled with grey and shot with lilacine; palpi and frons plum-coloured; vertex of head and antennæ gravel-yellow; collar lilacine; thorax sordid ochraceous; abdomen testaceous: wings below sulphur-yellow, basal area broadly cadmium-yellow reticulated with scarlet; primaries with external border red, greyish towards the apex: body stramineous; legs yellow, streaked above with scarlet; anterior coxæ scarlet. Expanse of wings 1 inch 7 lines.

Yokohama (*Jonas*).

DREPANA, *Schrank.*

Drepana scabiosa. (Plate XXV. fig. 9.)

Drepana scabiosa, *Butler, Ann. & Mag. Nat. Hist.* ser. 4, vol. xx. p. 478 (1877).

Above pearly grey: primaries with orange costa; a dark grey submarginal stripe; fringe greyish brown; an angulated central transverse series of squamose brown spots, surrounded by sordid white zones: secondaries with a similar spot at the end of the cell, two or three scarcely perceptible parallel discal greyish lines; fringe brown; collar golden orange. Under surface pale stramineous, rather brighter towards apex of primaries; fringe grey. Expanse of wings 1 inch 5 lines.

Yokohama (*Jonas*).

HYPSOMADIUS, *Butler.*

Hypsomadius insignis. (Plate XXV. fig. 3.)

Hypsomadius insignis, *Butler, Ann. & Mag. Nat. Hist.* ser. 4, vol. xx. p. 479 (1877).

Wings above shining silver-grey, crossed by two lines, the outer one of primaries oblique,

running to apex, dark red, the others testaceous; apical area above the line irrorated with black; fringe dark red; costa ochreous: secondaries with testaceous fringe. Body grey, prothorax white, sides of abdomen and anus rosy; head orange, with four lateral crimson patches; legs below whitish; femora whitish above; tibiæ yellow, with a black central spot above, rosy at the sides, all the joints fringed with long rosy hair; venter crimson. Wings below shining rose-coloured, crossed by innumerable grey lituræ, most densely on the primaries, which also have an indistinct oblique grey line running to apex; costa, apex, fringe, and apical veins yellow. Expanse of wings 2 inches.

Yokohama (*Jonas*).

SATURNIIDÆ.

CALIGULA, *Moore.*

Caligula japonica. (Plate XXVI. fig. 2.)

Caligula japonica, (pupa-case) *Moore, Trans. Ent. Soc.* 3rd ser. i. p. 322 (1862); *Technologist*, 1862, p. 7. n. 37; (imago) *Butler, Ann. & Mag. Nat. Hist.* ser. 4, vol. xx. p. 479 (1877).

♂. Nearly allied to the Indian *C. simla*, but at once distinguishable by the inner brown stripe of the primaries, which is nearly straight instead of broadly bisinuated, and that of the secondaries, which is almost sigmoidal instead of regularly convex with an abrupt angle near the abdominal margin. Expanse of wings 5 inches 2 lines.

Yokohama (*Jonas*).

Caligula jonasii. (Plate XXV. fig. 2.)

Caligula jonasii, *Butler, Ann. & Mag. Nat. Hist.* ser. 4, vol. xx. p. 479 (1877).

♂. Primaries with whitish costa; interno-basal area dull red, bounded by a dark stripe; discoidal and subcostal areas, and a band beyond the subbasal stripe bounded externally by a dark stripe, pink; a large ocellus at the end of the cell; disk dull yellowish brown; two black apical spots with white and rosy continuations; a broad submarginal band, white-edged at external angle; margin yellowish grey; fringe grey, with a pale brown central line: secondaries with the basal two thirds sordid pink, crossed by two grey stripes, and bounded by a third broader one; disk and border as in primaries, but the white edge of the submarginal band continuous; an ocellus at the end of the cell: head and thorax dark red; antennæ testaceous; collar grey, brown-bordered; abdomen clay-coloured. Wings below with the basal three fourths sordid pink, clouded with testaceous; a central brown stripe; a double zigzag discal line bounding the externo-discal area, which is nearly as above; body below reddish clay-colour; legs and palpi dark red. Expanse of wings 3 inches 10 lines.

Yokohama (*Jonas*).

RHODIA, *Moore.*

Rhodia fugax. (Plate XXVI. fig. 1.)

Rhodia fugax, *Butler*, *Ann. & Mag. Nat. Hist.* ser. 4, vol. xx. p. 480 (1877).

♂. Allied to the Indian *R. newara*, but much smaller, the primaries less falcate; the transverse bands darker, greyer, more dentated; the hyaline spots of primaries much larger, those of secondaries much smaller, the rosy tints replaced by rusty reddish, which also suffuses the greater part of the external area of the secondaries; antennæ much darker. Expanse of wings 4 inches 3–4 lines.

Yokohama (*Jonas*).

TROPÆA, *Hübner.*

Tropæa gnoma. (Plate XXV. fig. 1.)

Tropæa gnoma, *Butler*, *Ann. & Mag. Nat. Hist.* ser. 4, vol. xx. p. 480 (1877).

♂. Allied to *T. artemis*, but smaller, of a bluer green; the veins brown instead of white; the fringe whitish; the tails of secondaries much narrower, longer, and more divergent. Expanse of wings 3 inches 9 lines.

Yokohama (*Jonas*).

BRAHMÆA, *Walker.*

Brahmæa japonica. (Plate XXVI. fig. 3.)

Brahmæa japonica, *Butler*, *Ent. Month. Mag.* vol. x. p. 56 (1873).

Allied to *B. certhia* of India, smaller; ground-colour sordid whitish, the longitudinal streak running to the third submarginal spot of a pale sulphur-yellow colour; the spots in the central band of primaries fewer in number and more ocelliform; the rounded internal spot shaded more like a sphere and with only three spots across its centre, the middle one white, the others black; the submarginal spots confluent and dark externally, the broad outer border spotted with ill-defined white ellipses: secondaries with confluent submarginal spots and white-spotted border as in primaries; the central belt divided exactly through its centre by a brown line; slaty nervular streaks obsolete; basal area paler. Wings below paler, the blackish basal area only represented by a central band, which is narrow on the primaries; ordinary central band broader; discal lines more undulated; outer margin bordered internally by a white streak. Expanse of wings 4 inches.

Yokohama (*Pryer* and *Jonas*).

LASIOCAMPIDÆ.

APHA, *Walker*.

Apha tychoona. (Plate XXVII. fig. 5.)

Apha tychoona, *Butler*, *Ent. Month. Mag.* vol. xiv. p. 207 (1878).

Primaries above greyish brown, darker towards the outer margin; costa black-spotted, each spot followed by a more or less distinct sinuated line, which crosses the wing; two of these lines across the centre of the wing well defined; an oblique yellow stripe, with blackish internal and broad olivaceous external border, from inner margin to apex; an irregular greyish submarginal line; a costal apical yellow patch clouded with olivaceous: secondaries testaceous, with central yellow line in continuation of that of primaries, a dusky streak across the basal area; a discal irregular greyish line; outer border brownish. Wings below reddish orange, crossed by three parallel zigzag grey lines followed by a grey belt; a pyramidal irregular discal patch in primaries, an apical spot, and the whole outer half of secondaries bright yellow; irregular line as above, outer border clouded with brown; body below orange with red venter. Expanse of wings 2 inches 3 lines.

Yokohama (*Jonas*).

CIFUNA, *Walker*.

Cifuna locuples. (Plate XXVII. fig. 6.)

Cifuna locuples, *Walker*, *Cat. Lep. Het.* v. p. 1173 (1855).

♀. Primaries bright gravel-yellow clouded with lilacine, crossed by four ferruginous lines in pairs, the two first towards the base, indistinct and zigzag; the two others discal, irregular, forming the margins of a brownish belt; margin ferruginous: secondaries whity brown, with a dusky spot on the discocellulars and brownish fringe: body brown, the thorax darker than the abdomen; under surface reddish testaceous, with brown discocellulars and discal stripe. Expanse of wings 2 inches 1 line.

♀, Silhet; ♂ ♀, Yokohama (*Jonas*).

The Japanese examples are usually darker than the type and have a more irregular discal belt across the primaries. The type is not a male, and Walker's measurement, as usual, is incorrect.

TRABALA, *Walker*.

Trabala cristata. (Plate XXVII. fig. 1.)

Trabala cristata, *Butler*, *Ann. & Mag. Nat. Hist.* ser. 4, vol. xx. p. 480 (1877).

Nearly allied to *T. niveiceps* from India, but much more ochraceous, the primaries crossed by two pale brown stripes which diverge towards the costa, the inner one not far from the base, the outer one central; a transverse red-brown discal line; two ochre-bordered creamy spots

at the end of the cell; thoracic crest much higher than in *T. niveiceps* and bordered with clay-colour; head, collar, ventral surface of the body, and secondaries below cream-colour. Expanse of wings 3 inches 8 lines.

Yokohama (*Jonas*).

ODONESTIS, *Germar*.

Odonestis excellens. (Plate XXVI. figs. 4, 5.)

Odonestis excellens, *Butler*, *Ann. & Mag. Nat. Hist.* ser. 4, vol. xx. p. 481 (1877).

♂. Primaries gravel-yellow, with a white spot at the end of the cell, outer border broadly and irregularly chocolate-brown; base brownish, enclosing a large subcostal spot of the ground-colour; three equidistant zigzag lunulated brown stripes, the area between the first two brownish: secondaries chocolate-brown, with a central diffused darker band: body deep sordid ochreous; antennæ creamy with brown pectinations: wings below ochraceous, with three nearly parallel transverse brown streaks, the two outer ones on the secondaries macular. Expanse of wings 2 inches 10 lines.

♀. Sordid testaceous, with markings less distinct than in the male. Expanse of wings 3 inches 6 lines.

Yokohama (*Jonas*).

Odonestis superans. (Plate XXVII. fig. 4.)

Odonestis superans, *Butler*, *Ann. & Mag. Nat. Hist.* ser. 4, vol. xx. p. 481 (1877).

Smoky brown, with a white spot at the end of the cell; primaries with an irregularly sinuous disco-submarginal whitish-bordered dusky stripe, a slender transverse broadly sinuated discal line; male rather paler than the female, the primaries with a large white subcostal spot near the base, an angulated transverse subbasal line, the centre of the interno-median area occupied by a broad white nebula: wings below uniform in colouring, with an indication of a darker diffused discal streak across both wings. Expanse of wings, ♂ 3 inches 3 lines, ♀ 4 inches 3 lines.

Yokohama (*Jonas*).

Odonestis spectabilis. (Plate XXVII. fig. 3.)

Odonestis spectabilis, *Butler*, *Ann. & Mag. Nat. Hist.* ser. 4, vol. xx. p. 481 (1877).

♀. Like the preceding species, excepting that the primaries and thorax are black, and the whitish border of the submarginal stripe is replaced by white spots; no white spot at the end of the cell; under surface with dusky-streaked external area to primaries and black prothorax; ground-colour of the wings redder than in the preceding species. Expanse of wings 4 inches.

Yokohama (*Jonas*).

ŒONA, *Walker.*

Œona segregata. (Plate XXVI. figs. 6, 7.)

Œona segregata, *Butler*, *Ann. & Mag. Nat. Hist.* ser. 4, vol. xx. p. 482 (1877).

Primaries black, irrorated with white, most densely in the female; two central parallel oblique white bands, angulated towards the costa; a subbasal nebula and a zigzag series of discal spots, reddish and diffused in the male, white in the female: secondaries dark brown, with paler diffused central band and outer border: thorax black, margins of collar and tegulæ grey; abdomen reddish brown; antennæ white, with red-brown pectinations. Under surface pale reddish brown; costal margins blackish: primaries with a diffused white subcostal streak near the apex; an indisinct central dusky streak; eight discal spots and the fringe blackish: secondaries crossed from the middle by three dusky belts; costa and outer border whitish. Expanse of wings, ♂ 2 inches 7 lines, ♀ 3 inchcs 4 lines.

Yokohama (*Jonas*).

COSSIDÆ.

HEPIALUS, *Fabricius.*

Hepialus excrescens. (Plate XXVII. fig. 7.)

Hepialus excrescens, *Butler*, *Ann. & Mag. Nat. Hist.* ser. 4, vol. xx. p. 482 (1877).

♂. Primaries above pale pinky brown, reticulated with grey, and sparsely speckled with black; margin black-spotted; basal half, excepting the costal and internal areas, occupied by a large triangular yellowish-brown patch, its lower edge margined with whitish; an indistinct yellowish-brown discal band: secondaries grey, with the costal and outer margins brown, a black subapical costal spot; body brown. Under surface shining brown; costa of primaries spotted with sordid white and blackish. Expanse of wings 2 inches 8 lines.

Yokohama (*Jonas*).

Hepialus æmulus. (Plate XXVII. fig. 8.)

Hepialus æmulus, *Butler*, *Ann. & Mag. Nat. Hist.* ser. 4, vol. xx. p. 482 (1877).

♂. Nearly allied to the preceding species, but the primaries paler, brownish testaceous, the external and internal areas and a belt beyond the cell shining silvery greyish; two olivaceous spots in the cell and one below it: secondaries blackish, the outer border and apical portion of costa pale with brassy reflections: thorax whitish, with brown borders; abdomen greyish brown. Wings below brown, costal margins whitish, brown-spotted; pectus dark brown, legs paler; venter whity brown; an ochreous basal tuft on each side. Expanse of wings 3 inches.

Yokohama (*Jonas*).

CYMATOPHORIDÆ.

CYMATOPHORA, *Treitschke.*

Cymatophora ampliata. (Plate XXVIII. fig. 1.)

Cymatophora ampliata, *Butler*, *Ann. & Mag. Nat. Hist.* ser. 5, vol. i. p. 78 (1878).

Allied to *C. or* of Europe, but much larger, the primaries silvery grey, the inner band darker, straighter, with more dentated boundary-lines, the outer band with an additional angle towards the costa, and with its outer line more regularly undulated, blackish, and parallel to the inner line; fringe darker; secondaries darker; thorax greyer; head, collar, and antennæ testaceous. Expanse of wings 2 inches.

Yokohama (*Jonas*).

Cymatophora octogesima. (Plate XXVIII. fig. 2.)

Cymatophora octogesima, *Butler, Ann. & Mag. Nat. Hist.* ser. 5, vol. i. p. 78 (1878).

Allied to *C. ocularis*, much larger, of a dark silvery grey tint, with the transverse lines and margins of the discoidal spots deep black, the subbasal lines more dentated, the central band wider and its outer edge irregularly zigzag; fringe of secondaries paler. Expanse of wings 1 inch 11 lines.

Yokohama (*Jonas*).

LEUCANIIDÆ.

MYTHIMNA, *Hübner.*

Mythimna placida. (Plate XXVIII. fig. 5.)

Mythimna placida, *Butler*, *Ann. & Mag. Nat. Hist.* ser. 5, vol. i. p. 79 (1878).

Allied to *M. pseudargyria* from North America, but with the primaries and thorax pale sandy greyish, the discoidal spots less distinct, and the double discal series of black dots less complete; secondaries deep grey, darker externally, with whitish fringe: primaries below blackish; the costal and external borders whitish, crossed near the apex by a black dash; a marginal series of black dots; secondaries whitish, irrorated with black, a dot at the end of the cell, a discal series and a marginal series black; body below whitish. Expanse of wings 1 inch 10 lines.

Yokohama (*Jonas* and *Pryer*).

Mythimna rufipennis. (Plate XXVIII. fig. 6.)

Mythimna rufipennis, *Butler*, *Ann. & Mag. Nat. Hist.* ser. 5, vol. i. p. 79 (1878).

Allied to *M. turca* of Europe, but with barely an indication of the transverse lines on

primaries, and with the secondaries and abdomen shining whity brown with rosy margin; below much paler than in *M. turca*. Expanse of wings 1 inch 6 lines.

Yokohama (*Jonas*).

Mythimna grandis. (Plate XXVIII. fig. 7.)

Mythimna grandis, *Butler, Ann. & Mag. Nat. Hist.* ser. 5, vol. i. p. 79 (1878).

♀. Considerably larger than *M. turca*, the inner transverse stripe running parallel to the outer as far as the middle of the discoidal cell, then diverging abruptly inwards to the costal margin; the outer stripe regularly denticulated; under surface whity-brown, with a pink tinge; a dot at the end of each cell and a discal transverse stripe grey; a marginal row of black dots. Expanse of wings 2 inches 4 lines.

Hakodaté (*Whitely*); Yokohama (*Jonas*).

Mythimna divergens. (Plate XXVIII. fig. 8.)

Mythimna divergens, *Butler, Ann. & Mag. Nat. Hist.* ser. 5, vol. i. p. 79 (1878).

♀. Darker than the preceding species, the reniform spot larger; primaries with the central area somewhat ochraceous; an ill-defined red-brown patch immediately beyond the reniform spot; the inner transverse stripe of primaries slightly irregular, but diverging throughout from the outer stripe; the reddish fringes of a deeper tint: under surface deep dull reddish, the transverse discal line more slender, more continuous, and darker; primaries with a dusky nebula just beyond the cell. Expanse of wings 2 inches 3 lines.

Hakodaté (*Whitely*).

LEUCANIA, *Ochsenheimer*.

Leucania salebrosa. (Plate XXVIII. fig. 10.)

Leucania salebrosa, *Butler, Ann. & Mag. Nat. Hist.* ser. 5, vol. i. p. 80 (1878).

Allied to *L. insueta* from North America, but smaller; the body more uniformly whitish, the collar with two transverse grey lines; the tegulæ longitudinally streaked with reddish and speckled with black; the white spot at the end of the cell in primaries more elongated. Primaries below with the discoidal area greyish; secondaries below white, with a black dot at the end of the cell. Expanse of wings 1 inch 3–4 lines.

Yokohama (*Jonas*).

Leucania singularis. (Plate XXVIII. fig. 11.)

Leucania singularis, *Butler, Ann. & Mag. Nat. Hist.* ser. 5, vol. i. p. 80 (1878).

Primaries above sandy whitish, with two confluent grey patches, one apical, the other filling the basal half of the median interspaces and bounding the median vein; a silvery white spot at the end of the cell, and a black dot just within it; two deeply crinkled divergent transverse grey lines dotted externally with black; a submarginal series of brown lunules, and

a marginal series of black dots; fringe shining grey, white-tipped, intersected by an indistinct dusky line: secondaries grey, with brown marginal spots; costal area and fringe whitish: body above sandy whitish. Under surface white, primaries with greyish centre; two whitish dots at the end of the cell, a dusky discal line and a series of black marginal dots; secondaries with a dot at the end of the cell, a discal series and a marginal series black. Expanse of wings 1 inch 4–6 lines.

Yokohama (*Jonas*).

MICARDIA, *Butler*.

Micardia argentata. (Plate XXVIII. fig. 3.)

Micardia argentata, *Butler*, *Ann. & Mag. Nat. Hist.* ser. 5, vol. i. p. 81 (1878).

Primaries shining sordid whity brown; a large cuneiform silvery-white discoidal patch; central area olivaceous, varied with rose-colour, bounded externally by an oblique white line and connected, by an oblique olivaceous streak, with the apex; a submarginal whitish line and a marginal series of black dots: secondaries pale greyish brown, with dusky marginal dots and whitish fringe: body corresponding in colour with the wings; thorax crossed by a white belt. Primaries below shining greyish; costa sandy whitish, outer and inner borders shining cream-colour; secondaries shining white: body below greyish. Expanse of wings 1 inch 2–3 lines.

Yokohama (*Jonas*).

Micardia pulchra. (Plate XXVIII. fig. 4.)

Micardia pulchra, *Butler*, *Ann. & Mag. Nat. Hist.* ser. 5, vol. i. p. 81 (1878).

Primaries whity brown, the whole central area and a discal streak (bounded internally by a white-edged lilac streak, and externally by a submarginal white line) more or less tawny; a large subquadrate blackish patch bounded by the orbicular and reniform spots, which are lilac and white-edged; a large white-edged elliptical ochreous costal spot near apex; an interrupted black marginal line; fringe grey-tipped: secondaries silvery greyish, with an interrupted dusky marginal line and whitish fringe: body corresponding in general tint with the opposite wings. Under surface shining creamy white; primaries greyish in the centre. Expanse of wings 1 inch 2–3 lines.

Yokohama (*Jonas*).

APAMIIDÆ.

OCHRIA, *Hübner*.

Ochria fortis. (Plate XXVIII. fig. 9.)

Ochria fortis, *Butler*, *Ann. & Mag. Nat. Hist.* ser. 5, vol. i. p. 83 (1878).

♀. Allied to *O. flavago* of Europe, the yellow areas of the primaries much paler, the line interrupted by the reniform spot forming a semicircle; the discoidal spots much larger; the subbasal brown belt darker and much constricted below the median vein; submarginal band,

excepting at apex, suffused with brown and therefore indistinct: secondaries greyish brown, sordid whitish in the middle and at base: thorax and head brown; collar stramineous; abdomen sordid whitish. Wings below pale shining sandy brown; the fringe and discocellulars of primaries and two transverse streaks (the outer one of primaries diffused) dusky. Expanse of wings 1 inch 10 lines.

Yokohama (*Jonas*).

GORTYNA, *Ochsenheimer.*

Gortyna acuminata. (Plate XXIX. fig. 1.)

Gortyna acuminata, *Butler*, *Ann. & Mag. Nat. Hist.* ser. 5, vol. i. p. 83 (1878).

Brown, slightly glossed with lilacine and clouded with grey; primaries with the costa and two divergent whitish-edged transverse lines golden brown; basal area pale, bounded externally by a whitish line; outer border pale, with irregularly zigzag inner edge; discoidal spots greyish, edged internally with whitish and golden brown; a marginal series of blackish lunules; fringe grey: secondaries with a broad triangular greyish patch from the middle of the cell to the abdominal margin; an ill-defined greyish discal band; costal area testaceous: palpi and antennæ burnt-sienna; abdomen with the segmental margins, sides, and anus ochraceous. Under surface reddish ochraceous, shining; primaries with an ill-defined darker discal streak. Expanse of wings 1 inch 9–10 lines.

Yokohama (*Jonas*).

XYLOPHASIIDÆ.

XYLOPHASIA, *Stephens.*

Xylophasia sodalis. (Plate XXIX. fig. 2.)

Xylophasia sodalis, *Butler*, *Ann. & Mag. Nat. Hist.* ser. 5, vol. i. p. 83 (1878).

Intermediate in character between *X. rurea* and *X. hepatica* of Europe, with the pattern of the former, but the deeper coloration of the latter; darker and more silky than either, and the dark marginal spots of the primaries with a dull lilacine gloss: wings below not suffused with rose-colour as in *X. hepatica*, but with grey fringes (dark in primaries), spotted with ochraceous nearly as in *X. rurea*. Expanse of wings 1 inch 9 lines.

Yokohama (*Jonas*).

APAMEA, *Ochsenheimer.*

Apamea conciliata. (Plate XXIX. fig. 3.)

Apamea conciliata, *Butler*, *Ann. & Mag. Nat. Hist.* ser. 5, vol. i. p. 84 (1878).

Intermediate between *A. connexa* and *A. gemina* of Europe, with the form and general colouring of the latter, but with the irregular transverse band identical in shape with that of

A. connexa, although less oblique and further from the outer margin; the lower half of the band bounded externally by an oblique white line, and followed by a whitish nebula; apical area as in *A. gemina*, but without the pale apical spot; secondaries as in *A. connexa*: wings below darker than in *A. gemina*, with the dusky stripe of secondaries nearer to the middle and convex; no dark discocellular spot. Expanse of wings 1 inch 6 lines.

Yokohama (*Jonas*).

MIANA, *Stephens*.

Miana vulnerata. (Plate XXIX. fig. 4.)

Miana vulnerata, *Butler*, *Ann. & Mag. Nat. Hist.* ser. 5, vol. i. p. 84 (1878).

Primaries greyish black with brown discal area; crossed by two very irregular black lines, most divergent on the costa and most convergent just below the cell; two black markings at the base; discoidal spots pale brown, enclosing an oval grey annulus and edged with black; an N-shaped band, testaceous, speckled with carmine, just beyond the outer black line; an ill-defined submarginal grey streak; a marginal series of black lituræ; fringe grey, intersected by a testaceous line: secondaries pale brown, with a marginal black line; fringe whitish, with a central grey line: body above greyish brown; abdomen whitish at the sides. Primaries below shining grey, the borders spotted with whitish: secondaries shining whitish; margin and a discocellular spot black; two discal grey lines; fringe as above: body whitish. Expanse of wings 1 inch.

Yokohama (*Jonas*).

Miana segregata. (Plate XXIX. fig. 5.)

Miana segregata, *Butler*, *Ann. & Mag. Nat. Hist.* ser. 5, vol. i. p. 85 (1878).

Primaries above brown, crossed before the middle by a broad pale-edged darker band, a white-edged dark-brown costal spot near the apex, continued as an indistinct irregular band to the middle of the disk and enclosing a longitudinal black dash; a marginal series of black dots; an indistinct pale sigmoidal line near the base; fringe greyish, dusky below the middle: secondaries paler, with white costal margin; fringe partially white-tipped; body brown, whitish at the base of abdomen. Primaries below shining greyish; internal area whitish, costa and external area whity brown, speckled with darker brown; costa flecked beyond the cell with white; two indistinct parallel discal lines: secondaries whity brown, darker towards apex; a dusky discocellular spot and an angulated discal line: body brown; pectus clothed with whitish hair. Expanse of wings 1 inch 2 lines.

Yokohama (*Jonas*).

CARADRINIDÆ.

RADINACRA, *Butler.*

Radinacra palpalis. (Plate XXIX. fig. 7.)

Radinacra palpalis, *Butler*, *Ann. & Mag. Nat. Hist.* ser. 5, vol. i. p. 161 (1878).

Primaries above shining greyish brown, crossed by two slender black lines; a subbasal litura, a central waved stripe, and a sinuated discal stripe dusky; a marginal series of black dots; fringe grey: secondaries shining greyish white; discocellulars, a discal line, and the outer border slightly brownish: body grey, anal tuft pale testaceous. Wings below paler than above; a marginal series of black dots; a discocellular line; a black discocellular spot on each wing, but largest on the secondaries: body clothed with whitish hair. Expanse of wings 1 inch 5 lines.

Yokohama (*Jonas*).

AMYNA, *Guénée.*

Amyna stellata. (Plate XXIX. fig. 6.)

Amyna stellata, *Butler*, *Ann. & Mag. Nat. Hist.* ser. 5, vol. i. p. 162 (1878).

Primaries above shining brown, crossed by two irregular dentated white-edged blackish lines; a third similarly coloured sinuated discal line; costa white-spotted; a white spot at the end of the cell; a marginal series of impressed dots; fringe grey: secondaries grey, crossed by a whitish-bordered irregular discal dusky line; fringe whitish, intersected by a grey line: body brown. Wings below whitish, crossed by a blackish discal line dentated on secondaries; apical third of costa of primaries white-spotted; a marginal series of black dots: secondaries with a spot at the end of the cell and a marginal series of dots black: legs with the anterior tibiæ and tarsi and the tarsi of the middle pair black, banded with white. Expanse of wings 1 inch 1 line.

Yokohama (*Jonas*).

NOCTUIDÆ.

TRIPHÆNOPSIS, *Butler.*

Triphænopsis lucilla. (Plate XXXIII. fig. 1.)

Triphænopsis lucilla, *Butler*, *Ann. & Mag. Nat. Hist.* ser. 5, vol. i. p. 163 (1878).

Primaries above greenish grey, clouded with brown; costa brown-spotted to the end of the cell and beyond it with white; the black lines bounding the central band indistinct above the

median vein, the inner one double; reniform spot white, varied with brown; a brown-spotted white spot from the outer line to near the external angle; outer border grey, varied with blackish, and bounded within by a series of testaceous spots; a black wavy marginal line: secondaries brown; the fringe, outer margin, and a central spot ochreous; marginal border brown, two or three black spots on the fringe. Primaries below blackish, the costa spotted with white at apex; fringe spotted with ochraceous; costa irrorated with brown; a discocellular lunule and the border black. Expanse of wings 1 inch 9 lines.

Yokohama (*Jonas*).

AGROTIS, *Ochsenheimer.*

Agrotis ingrata. (Plate XXIX. fig. 9.)

Agrotis ingrata, *Butler, Ann. & Mag. Nat. Hist.* ser. 5, vol. i. p. 162 (1878).

♀. Primaries above dark smoky grey, with black-speckled irregular white outer border; discoidal spots black-edged; a short black dash below the cell; a large whitish patch at base of internal area; two irregular brown-edged white lines across the basal area; apical third of costa white-spotted; a series of black marginal spots: secondaries sordid white, with dusky borders: thorax pale grey; abdomen brownish testaceous, whitish at base. Wings below paler, with black-speckled costal areas; black discocellular and marginal spots; primaries with whitish outer border; body greyish. Expanse of wings 1 inch 8 lines.

Yokohama (*Jonas*).

Agrotis ustulata. (Plate XXIX. fig. 10.)

Agrotis ustulata, *Butler, Ann. & Mag. Nat. Hist.* ser. 5, vol. i. p. 162 (1878).

Primaries above shining dark grey, clouded with whity brown; costa pale grey, crossed by oblique black dashes; discoidal spots and a spot at base whity brown and black-edged; two sinuated central black lines from the discoidal spots to the inner margin; outer border irregular, whitish at apex, internally white-edged: secondaries sordid whitish, with dusky outer border; body greyish. Wings below paler than above, shining, immaculate; body clothed with slightly reddish hairs. Expanse of wings 1 inch 8 lines.

Yokohama (*Jonas*).

SPÆLOTIS, *Boisduval.*

Spælotis nitens. (Plate XXIX. fig. 8.)

Spælotis nitens, *Butler, Ann. & Mag. Nat. Hist.* ser. 5, vol. i. p. 164 (1878).

Pale shining greyish brown; discoidal spots of primaries white-edged; costa spotted with black and white; four white-edged dentate-sinuate blackish lines, the first two near the base,

the last two across the disk; margin black-spotted; fringe intersected by a dusky line: secondaries with broad grey outer border; body dull. Wings below with pale outer border; two dusky discal lines; outer margin black-spotted; apical third of costa of primaries white-spotted. Expanse of wings 1 inch 5 lines.

Yokohama (*Jonas*).

GRAPHIPHORA, *Ochsenheimer*.

Graphiphora exusta. (Plate XXIX. fig. 11.)

Graphiphora exusta, *Butler*, *Ann. & Mag. Nat. Hist.* ser. 5, vol. i. p. 164 (1878).

Primaries red-brown; basal area crossed by two irregular darker lines; discoidal spots white-edged; a chocolate-brown discal belt, its inner edge limited by an angulated pale line, its outer edge irregularly undulated; fringe tipped with blackish: secondaries shining pale brown; fringe intersected by a dusky line and white externally: body corresponding in colour with the wings; wings below shining greyish, with a dusky discal line. Expanse of wings 1 inch 9 lines.

Yokohama (*Jonas*).

Graphiphora canescens. (Plate XXX. fig. 1.)

Graphiphora canescens, *Butler*, *Ann. & Mag. Nat. Hist.* ser. 5, vol. i. p. 165 (1878).

Primaries above lilacine greyish, with the disk and a central streak red-brown; the ordinary lines dark brown, with pale borders; discoidal spots white-edged, with black encircling lines; outer border grey; a series of dark brown marginal spots: secondaries shining brown; fringe white, intersected by an indistinct greyish line: body corresponding in colour with the wings. Wings below whitish, with reddish costal areas; two dusky discal lines, the inner one blackish, obscured (excepting at costa) in the primaries by a shade of grey extending from the base to the middle of the disk: body below reddish. Expanse of wings 1 inch 10 lines.

Yokohama (*Jonas*).

Graphiphora pacifica. (Plate XXX. fig. 2.)

Graphiphora? pacifica, *Butler*, *Ann. & Mag. Nat. Hist.* ser. 5, vol. i. p. 165 (1878).

Primaries above greyish brown; disk browner externally; ordinary lines black, with white borders; discoidal spots whitish; a black interno-median spot below the orbicular; three white costal dots near apex: secondaries sordid white, with broad dusky outer border; a marginal white line near anal angle; fringe greyish towards apex: body grey. Wings below shining sordid white, costal and external areas black-speckled; a well-defined brown discal stripe; a blackish discocellular spot on each wing. Expanse of wings 1 inch 10 lines.

Yokohama (*Jonas*).

OCHROPLEURA, *Hübner.*

Ochropleura stupenda. (Plate XXX. fig. 3.)

Ochropleura stupenda, *Butler*, *Ann. & Mag. Nat. Hist.* ser. 5, vol. i. p. 166 (1878).

Primaries above greyish black, the basal two thirds of the costa sandy whitish, with two basal black striæ; discoidal cell, between the usual spots, velvet-black; the ordinary lines, which are spotted with sandy whitish, edged with velvet-black; fringe brown, intersected by a grey line: secondaries creamy white, external half becoming gradually blacker towards the margin: thorax black; collar whitish, with a red-brown posterior line; abdomen pale brown. Wings below more uniform, and for the most part paler than above, with well-marked dusky discal stripe; body grey below, with pale anus. Expanse of wings 2 inches 2 lines.

Yokohama (*Jonas*).

ORTHOSIIDÆ.

SEMIOPHORA, *Stephens.*

Semiophora pallescens. (Plate XXX. fig. 4.)

Semiophora pallescens, *Butler*, *Ann. & Mag. Nat. Hist.* ser. 5, vol. i. p. 166 (1878).

Primaries above pale reddish brown; two black lines across the basal area; the discoidal cell beyond the second line black, with the usual spots pale; median area greyish; discal line dentate-sinuate, blackish; outer border greyish, irregular; a marginal row of black dots: secondaries silky whitish; a greyish discal line; body brown: under surface shining greyish, with a dusky discal line. Expanse of wings 1 inch 8 lines.

Yokohama (*Jonas*).

TÆNIOCAMPA, *Guénée.*

Tæniocampa tabida. (Plate XXX. fig. 5.)

Tæniocampa tabida, *Butler*, *Ann. & Mag. Nat. Hist.* ser. 5, vol. i. p. 166 (1878).

Allied to *T. instabilis*; but the disk of primaries crossed by two parallel discal blackish sinuated lines; outer border not bounded within by rusty spots, but terminating in a black spot on the costa; fringe greyish brown, rosy at the base: secondaries broader, darker, with rosy fringe: head and collar dull white, the latter with a dark reddish marginal line; abdomen whitish at the base. Wings below shining sandy whitish, costæ rosy; two indistinct parallel grey discal lines; primaries with grey centre; pectus rosy, venter sandy whitish, anus testaceous. Expanse of wings 1 inch 10 lines.

Yokohama (*Jonas*).

Tæniocampa carnipennis. (Plate XXX. fig. 6.)

Tæniocampa carnipennis, *Butler, Ann. & Mag. Nat. Hist.* ser. 5, vol. i. p. 167 (1878).

Primaries reddish brown, the discoidal spots outlined in ferruginous; two lunated discal lines, a black dot on the inner line beyond the cell, two black spots near the base; a black ⊢⊣-shaped marking on the internal area: secondaries sordid whitish: thorax coloured like the primaries, abdomen testaceous. Under surface pale flesh-colour; costa sprinkled with grey scales; a wavy abbreviated discal line on each wing: primaries with brownish discoidal area; internal area silvery: secondaries with a black discocellular spot: body below greyish, reddish in front. Expanse of wings 1 inch 10 lines.

Yokohama (*Jonas*).

Tæniocampa ella. (Plate XXX. fig. 7.)

Tæniocampa ella, *Butler, Ann. & Mag. Nat. Hist.* ser. 5, vol. i. p. 167 (1878).

Allied to *T. gracilis*, but larger, the markings darker, the discal line of primaries bordered internally by a blackish streak; secondaries broader, whiter; under surface whiter, with well-marked discocellular spots. Expanse of wings 1 inch 9 lines.

Yokohama (*Jonas*).

ORTHOSIA, *Ochsenheimer.*

Orthosia lizetta. (Plate XXX. fig. 8.)

Orthosia lizetta, *Butler, Ann. & Mag. Nat. Hist.* ser. 5, vol. i. p. 167 (1878).

Nearest to *O. lævis*, but larger and paler; no trace of the central angular line of primaries; the inner dentated line also absent; the discal series of black dots oblique and sometimes wanting; limitation of outer border not sinuated, bounded internally by a black costal spot, the pale line margined with black scales, which form a spot a little below the apex; submarginal spots well marked: secondaries greyish brown, shining, sometimes crossed by a discal series of dusky spots; fringe broader than in *O. lævis*, whitish: under surface paler, with discocellular spots and discal series well defined and blackish. Expanse of wings 1 inch 6 lines.

Yokohama (*Jonas*).

EUPSILIA, *Hübner.*

Eupsilia tripunctata. (Plate XXX. fig. 9.)

Eupsilia tripunctata, *Butler, Ann. & Mag. Nat. Hist.* ser. 5, vol. i. p. 168 (1878).

Allied to *E. satellitia* of Europe, but the primaries silvery grey, with the central area and outer border slightly dusky; the lines wider apart, the outer one more regular; the limit of the outer border indicated by a brown instead of a pale line; the three white spots much larger;

secondaries and body greyer; wings below paler, the primaries showing the spots of the upper surface; transverse lines indistinct; secondaries immaculate. Expanse of wings 1 inch 7 lines.

Yokohama (*Jonas*).

HOPORINA, *Boisduval.*

Hoporina sericea. (Plate XXX. fig. 10.)

Hoporina sericea, *Butler, Ann. & Mag. Nat. Hist.* ser. 5, vol. i. p. 168 (1878).

Coloration of *H. croceago* of Europe, but the primaries more elongated; the grey markings less distinct, excepting the three angulated transverse lines; below redder, the markings better defined; secondaries with the markings less strongly defined. Expanse of wings 1 inch 8 lines.

Yokohama (*Jonas*).

This species chiefly differs from *H. croceago* in form.

BRACHYXANTHIA, *Butler.*

Brachyxanthia peculiaris. (Plate XXX. fig. 11.)

Brachyxanthia peculiaris, *Butler, Ann. & Mag. Nat. Hist.* ser. 5, vol. i. p. 169 (1878).

♀. Primaries stramineous, crossed by brown lines, as in *Xestia ochreago* of Europe; an additional dark brown oblique line from apex to inner margin, from which a second is given off (below the reniform spot), which runs to costa; secondaries silky brown, the costa, fringe, and outer margin creamy whitish; body corresponding in colour with the wings: wings below pale creamy yellow, with a brown discal line; veins of outer margin, marginal lunules, and a costal dash in primaries brown. Expanse of wings 1 inch 2–3 lines.

♂, Hakodaté (*Whitely*); ♀, Yokohama (*Jonas*).

The male has the disk of primaries purplish brown beyond the oblique line.

MESOGONA, *Boisduval.*

Mesogona contracta. (Plate XXXI. fig. 1.)

Mesogona contracta, *Butler, Ann. & Mag. Nat. Hist.* ser. 5, vol. i. p. 169 (1878).

Allied to *M. acetosellæ* of Europe, but with narrower wings; primaries darker, the outer stripe angulated; no black discal dots, but a pale line limiting the greyish outer border; secondaries greyer, with black marginal spots; body greyer; abdomen grey, bordered and tufted with reddish: wings below sordid whitish, tinted with pink; a black discocellular spot; a blackish discal stripe and black marginal dots; primaries with the centre greyish; body greyish brown. Expanse of wings 1 inch 11 lines to 2 inches.

Yokohama (*Jonas*).

COSMIIDÆ.

COSMIA, *Ochsenheimer.*

Cosmia distincta. (Plate XXXI. fig. 2.)

Cosmia distincta, *Butler*, *Ann. & Mag. Nat. Hist.* ser. 5, vol. i. p. 192 (1878).

Primaries grey, crossed by two blackish-edged white lines; an abbreviated basal white litura; central area clouded with ferruginous, crossed by an angulated brown belt; external area dusky, limited within by a whitish streak; a semicircular whitish-bordered costal brownish spot: secondaries as in *C. affinis* of Europe; under surface intermediate in character between *C. pyralina* and *C. affinis*. Expanse of wings 1 inch 5–7 lines.

Yokohama (*Jonas*).

HADENIDÆ.

PLATAPLECTA, *Butler.*

Plataplecta subviridis. (Plate XXXI. fig. 3.)

Plataplecta subviridis, *Butler*, *Ann. & Mag. Nat. Hist.* ser. 5, vol. i. p. 195 (1878).

♂. Primaries white, irrorated with grey, with blackish and white markings nearly as in *Aplecta nimbosa*; the whole wing, particularly near the base, blotched with pale green; costa blackish, white-spotted near apex; reniform spot black-edged; fringe brown: secondaries pale brown, with darker outer border; a blackish marginal line; fringe whitish. Under surface pale shining brown; costa of primaries white-spotted near apex; secondaries whitish, with dusky outer border and discocellulars; venter whitish. Expanse of wings 1 inch 6–7 lines.

Yokohama (*Jonas*).

HADENA, *Guénée.*

Hadena gnoma. (Plate XXXI. fig. 7.)

Hadena gnoma, *Butler, Ann. & Mag. Nat. Hist.* ser. 5, vol. i. p. 195 (1878).

♀. Nearly allied to *H. atriplicis* of Europe, larger and darker; primaries of a slaty grey colour, varied with black-brown and bright green markings, which are arranged as in *H. atriplicis*; the bifid white spot less pure in colour and larger: secondaries, abdomen, and under surface darker. Expanse of wings 2 inches 2 lines.

Yokohama (*Jonas*).

RAPHIA, *Hübner.*

Raphia fasciata. (Plate XXXI. fig. 5.)

Raphia fasciata, *Butler, Ann. & Mag. Nat. Hist.* ser. 5, vol. i. p. 193 (1878).

Silvery greyish, rather darker than the European *R. viminalis,* with the ground-colour of the central band and base of costal area in the primaries dark brown, spotted with black; the interno-basal area silvery white. Expanse of wings 1 inch 3–4 lines.

Yokohama (*Jonas*).

XYLINIDÆ.

CALOCAMPA, *Stephens.*

Calocampa fumosa. (Plate XXXI. fig. 8.)

Calocampa fumosa, *Butler, Ann. & Mag. Nat. Hist.* ser. 5, vol. i. p. 196 (1878).

Closely allied to *C. exoleta* of Europe, altogether more fuliginous, the markings less distinct, discoidal spots of primaries more quadrate, the two hastate black spots more elongated: secondaries dark grey; base pale brown; fringe pale grey; head and collar whity brown, broadly bordered with piceous; thorax blackish; shoulders sordid white; abdomen whity brown, with confused dorsal and transverse dusky stripes. Expanse of wings 2 inches 8 lines.

Yokohama (*Jonas*).

Calocampa formosa. (Plate XXXI. fig. 9.)

Calocampa formosa, *Butler, Ann. & Mag. Nat. Hist.* ser. 5, vol. i. p. 196 (1878).

Primaries shining grey; costa, outer half of disk, external border, and fringe suffused with laky brown; discoidal spots outlined in black; two central undulated black lines, the outer one bordered externally by black spots; inner part of disk whitish, followed by a series of black dots; external area cut off abruptly by an oblique line from the costa, united to a broad transverse plum-coloured streak, intersected by a pale line; submarginal area whitish; a series of black marginal spots; costa, almost to apex, black, spotted beyond the cell with white: secondaries brown, with dusky outer border; fringe sordid white, intersected by a dusky line: body nearly as in the preceding species. Wings below dark for the genus, with well-defined blackish marginal lincs on a pale border; secondaries with a broad dusky discal belt. Expanse of wings 2 inches 2 lines.

Yokohama (*Pryer* and *Jonas*).

XYLINA, *Ochs.*

Xylina pruinosa. (Plate XXXI. fig. 6.)

Xylina pruinosa, *Butler, Ann. & Mag. Nat. Hist.* ser. 5, vol. i. p. 197 (1878).

Primaries above shining silver-grey, with an indistinct paler discal band; the base of the cell, three blackish-edged discoidal spots, an oval subbasal spot on the internal area, and a small partly black-edged rounded spot paler grey; a marginal undulated dark line; fringe irrorated with white: secondaries sordid white, the apex and outer border broadly grey; fringe testaceous at the base, tipped with white, grey in the centre; thorax grey, speckled with testaceous and white; abdomen pale greyish, with darker dorsal line and rosy brownish fringe. Wings below shining silvery whitish, with opaque brown-speckled costæ to all the wings and outer border to primaries; secondaries with a dusky discocellular dot; body rosy brownish. Expanse of wings 1 inch 5 lines.

Yokohama (*Pryer* and *Jonas*).

ANTHOPHILIDÆ.

ANTHOPHILA, *Ochs.*

Anthophila paradisea. (Plate XXXI. fig. 4.)

Anthophila paradisea, *Butler, Ann. & Mag. Nat. Hist.* ser. 5, vol. i. p. 199 (1878).

Primaries with the basal half pale lemon-yellow, white at base of inner margin; disk bright rose-colour, whitish on the costa near apex, and indistinctly blotched with bronzy brown; outer border bronzy brown, bounded internally by a series of white dots; fringe bright rose-colour: secondaries pale brown; fringe white, tipped with rose-colour: head and thorax lemon-yellow, abdomen white. Primaries below pale greyish brown, with whitish borders; base of costa and outer half of fringe rose-colour: secondaries white, fringe tipped with pink; pectus white; legs and palpi rose-coloured externally; venter greyish. Expanse of wings 1 inch 2 lines.

Yokohama (*Jonas*).

PLUSIIDÆ.

PLUSIA, *Ochs.*

Plusia typinota. (Plate XXXI. fig. 10.)

Plusia typinota, *Butler, Ann. & Mag. Nat. Hist.* ser. 5, vol. i. p. 201 (1878).

Allied to *P. gamma* of Europe, but the γ more elongated; three other silvery markings, somewhat resembling the letters *I, J, K*, but with the *J* sloping backwards, across the costal and discoidal areas; the margins of the central band rather silvery than golden; outer border

of secondaries and borders of all the wings below ill-defined. Expanse of wings 1 inch 9 lines.

Yokohama (*Jonas*).

Plusia purissima. (Plate XXXI. fig. 11.)

Plusia purissima, *Butler*, *Ann. & Mag. Nat. Hist.* ser. 5, vol. i. p. 202 (1878).

Allied to *P. parilis*, larger, greyer, with better-defined markings, more sericeous; primaries more acuminate; lower half of external area and a broad streak, from the apex to the end of the cell, whitish; transverse band more oblique, the limiting lines black, with white outer edge; the γ replaced by two silver spots; the submarginal line straight to the third median branch, terminating before apex; a marginal abbreviated piceous and white streak: secondaries pale brown, darker externally; two ill-defined dusky discal lines: under surface silky grey, with two parallel darker discal lines; secondaries with the basal half whitish. Expanse of wings 1 inch 5 lines.

Yokohama (*Jonas*).

CALPIDÆ.

CALPE, *Treitschke*.

Calpe excavata. (Plate XXXII. fig. 1.)

Calpe excavata, *Butler*, *Ann. & Mag. Nat. Hist.* ser. 5, vol. i. p. 202 (1878).

Form of *C. thalictri*, excepting that the inner margin of the primaries is more deeply excavated and more widely lobate. More nearly allied to *C. rectistria*, but the primaries of a richer reddish-brown colour; the golden patch above the external angle wanting; the double oblique line from the apex more widely separated and irregular towards the inner margin: secondaries of a dull sandy brown tint, with broad fuliginous external border; head and thorax orange and red-brown, tinted with lilacine as in *C. rectistria*; abdomen fuliginous; primaries below redder; secondaries yellower, with black discocellular lunule; a dusky discal streak; disk beyond the streak greyish, excepting at apex. Expanse of wings 2 inches 1 line.

Yokohama (*Jonas*).

Calpe sodalis. (Plate XXXII. fig. 2.)

Calpe sodalis, *Butler*, *Ann. & Mag. Nat. Hist.* ser. 5, vol. i. p. 203 (1878).

Closely allied to *C. thalictri*, but differing in its paler colouring and the shortness and colour of the fringe, which does not differ from the rest of the wing; primaries below with darker discal streaks; secondaries with paler discocellular litura and discal streak. Expanse of wings 1 inch 10 lines.

Hakodaté (*Whitely*); Yokohama (*Jonas*).

GONOPTERIDÆ.

GONITIS, *Guénée.*

Gonitis commoda. (Plate XXXII. fig. 3.)

Gonitis commoda, *Butler*, *Ann. & Mag. Nat. Hist.* ser. 5, vol. i. p. 203 (1878).

Most nearly allied to *G. fulvida*, but larger and darker; the primaries redder; the lines darker and less strongly undulated, the central line straight; the fringe less broadly white-tipped; secondaries with much less white on the fringe; wings below darker, the lines darker, the discal line of secondaries carried across the wing as in *G. combinans*. Expanse of wings 1 inch 10 lines.

Yokohama (*Jonas*).

AMPHIPYRIDÆ.

AMPHIPYRA, *Ochs.*

Amphipyra tripartita. (Plate XXXII. fig. 4.)

Amphipyra tripartita, *Butler*, *Ann. & Mag. Nat. Hist.* ser. 5, vol. i. p. 288 (1878).

Primaries above glossy raven-black, crossed by two white belts, the outer one partly intersected by a tapering dull red streak; external area brownish, with a submarginal series of white-speckled black spots: secondaries shining chocolate-brown; fringe pale brown, with a broad central grey belt; thorax raven-black; abdomen fuliginous brown, with a shining greyish lustre: under surface greyish fuliginous, shining, the external area broadly darker, crossed by a pale discal band; secondaries with the costal half dusky, base whitish; a black discocellular spot; legs black, white-banded. Expanse of wings 1 inch 11 lines to 2 inches 4 lines.

Yokohama (*Jonas*).

ORTHOGONIA, *Feld.*

Orthogonia crispina. (Plate XXXII. fig. 6.)

Orthogonia crispina, *Butler*, *Ann. & Mag. Nat. Hist.* ser. 5, vol. i. p. 288 (1878).

Nearly allied to *O. sera* of Felder, but larger, the primaries of a paler whity brown tint, with darker central band; no dark apical patch on the costa; secondaries broader and greyer in tint; thorax with a longitudinal whitish patch. Expanse of wings 2 inches 6 lines.

Yokohama (*Jonas*).

MORMO, *Ochs.*

Mormo mucivirens. (Plate XXXII. fig. 5.)

Mormo mucivirens, *Butler, Ann. & Mag. Nat. Hist.* ser. 5, vol. i. p. 289 (1878).

Primaries above dull olive-green, with darker markings (nearly as in *M. maura* of Europe), edged with pale green; the pale brown diffused areas of *M. maura* replaced by silky grey, mottled with olive-green: secondaries purplish brown, the external area broadly darker; fringe testaceous, intersected by a grey stripe: body corresponding with the wings. Under surface fuliginous brown: primaries with greyish inner margin; two dusky discal stripes; outer border rather paler than the ground-colour; costa spotted with testaceous towards apex; fringe with a pale basal line: secondaries with a large spot at the end of the cell and a discal stripe blackish brown; external area dusky; fringe as above: legs blackish, varied with testaceous. Expanse of wings 2 inches 6–7 lines.

Yokohama (*Jonas*).

PERINÆNIA, *Butl.*

Perinænia lignosa. (Plate XXXII. fig. 7.)

Perinænia lignosa, *Butler, Ann. & Mag. Nat. Hist.* ser. 5, vol. i. p. 289 (1878).

Shining fuliginous brown; primaries reticulated with paler brown; a longitudinal black streak through the cell, interrupted by white dots indicating the discoidal spots, and terminating as it reaches a transverse discal black line; beyond the latter four or five decreasing black longitudinal dashes; a marginal series of black dots; fringe greyish, with a basal testaceous line: secondaries with a broad blackish border; fringe whitish: abdomen greyish. Wings below whity brown, with diffused and blurred blackish discal line and black discocellular spots; cell of primaries greyish; margin and marginal dots black. Expanse of wings 1 inch 10 lines.

Yokohama (*Jonas*).

TOXOCAMPIDÆ.

TOXOCAMPA, *Guénée.*

Toxocampa lilacina. (Plate XXXII. fig. 8.)

Toxocampa lilacina, *Butler, Ann. & Mag. Nat. Hist.* ser. 5, vol. i. p. 289 (1878).

Allied to *T. viciæ* of Europe, but the primaries distinctly shot with lilac; the discocellular spot subtriangular and excavated in front, without the upper black dots; the discal belt with its inner pale margin much more deeply sinuated, and its outer pale edge straighter, greyish

brown; external area greyish brown; secondaries greyer, with broader fringe; body greyer; collar and crest of head jet-black; under surface greyer, the discal belt more diffused; tarsi of front legs with the terminal joints black. Expanse of wings 1 inch 9–10 lines.

Yokohama (*Jonas*).

Toxocampa enormis. (Plate XXXII. fig. 9.)

Toxocampa enormis, *Butler*, *Ann. & Mag. Nat. Hist.* ser. 5, vol. i. p. 290 (1878).

Primaries grey, with a slightly lilacine tint, crossed by five lines, the first of which is little more than an elongated brown spot, the third is interrupted by the black reniform spot, which has a brown centre and white edge, fourth line whitish, angular, the others bordered with pale grey; external area suffused with brown; fifth line whitish, nearly straight; a submarginal series of whitish dashes terminating in black dots; fringe dark grey, traversed by a pale line: secondaries pale brown, with the external area fuliginous; fringe stramineous. Body much as usual; under surface pale sandy yellow: wings with a broad external band; outer border brownish, widest in primaries; fringe of these wings dark grey, with basal whitish line; central area greyish: secondaries with a grey discocellular dot. Expanse of wings 2 inches 6 lines.

Yokohama (*Jonas*).

CATOCALIDÆ.

CATOCALA, *Ochs.*

Catocala nivea. (Plate XXXIII. fig. 4.)

Catocala nivea, *Butler*, *Cist. Ent.* ii. p. 241. n. 2 (1877).

Primaries grey, striated with greyish brown; three angulated pale brownish belts, the outer and inner ones interrupted by irregular black lines, bordered with greenish white, the central one also interrupted by the reniform spot, which is creamy, bordered with greenish white; veins spotted with black and white; an undulated pale brownish discal belt; a marginal series of black-edged white spots, the third of which is connected with the outer black line by a longitudinal black stripe: secondaries white, with two transverse black belts; series of submarginal lituræ and a diffused spot near the apical margin black; head white; collar brown, white crossed by two brown lines in front; thorax white, speckled with grey and black; abdomen grey. Wings below white, with a central black belt; base grey; a broad blackish discal band; outer border of primaries greyish brown; fringe white: secondaries with a grey discocellular spot; outer border brown-speckled: body below whity brown. Expanse of wings 4 inches 3 lines.

Yokohama (*Jonas*).

Catocala ella. (Plate XXXIII. fig. 5.)

Catocala ella, *Butler*, *Cist. Ent.* ii. p. 242. n. 3 (1877).

Allied to *C. convexa*, but larger, the primaries with more sharply defined markings, the secondaries brighter ochreous, with the central black band widest at costa and gradually narrowing to the abdominal margin; the black border wider and more regular, notched near the anal angle; the ochreous belts below broader and brighter, not varied with white; the angular black band of secondaries below regular, and widest at costa. Expanse of wings 2 inches 7 lines.

Yokohama (*Jonas*).

Catocala jonasii. (Plate XXXIII. fig. 6.)

Catocala jonasii, *Butler, Cist. Ent.* ii. p. 242. n. 5 (1877).

Primaries silver-grey, whitish in and beyond the discoidal cell, crossed by two black lines as in *C. neogama*, white-edged; reniform spot and a spot below it black-edged; a row of black spots beyond the cell; a partly black-edged dentated discal white streak from the costa to the external angle; a submarginal series of black dots; fringe white: secondaries ochreous, with two black bands, one central, the other marginal; two internal abbreviated brown streaks; apex and fringe pale ochreous: body grey, abdomen brownish. Wings below white, yellowish towards the inner margins; primaries crossed by three, and secondaries by two black bands: body below white; abdomen with the anal segments and sides yellowish. Expanse of wings 3 inches.

Yokohama (*Jonas*).

Catocala mirifica. (Plate XXXIII. fig. 7.)

Catocala mirifica, *Butler*, *Cist. Ent.* ii. p. 243. n. 6 (1877).

Allied to *C. paranympha*, but the primaries pale silver-grey, almost white; a broad dark-brown apical costal patch, upon which alone the black markings are well-defined; traces of discal and marginal brownish belts below the brown patch; two apical greyish nebulæ: secondaries bright ochreous, with the central black belt rather narrower than in *C. paranympha* and the interrupted border wider; thorax coloured like the primaries; abdomen testaceous. Under surface paler, the yellow belts broader: primaries with the pale outer border only defined at apex; fringe yellow; secondaries with the black belts more regular, not obliterated near the costa: body below white. Expanse of wings 2 inches 3 lines.

Yokohama (*Jonas*).

Catocala xarippe. (Plate XXXIII. fig. 8.)

Catocala xarippe, *Butler, Cist. Ent.* ii. p. 243. n. 7 (1877).

Allied to *C. polygama*, but much larger: secondaries with the central black belt broader,

not so sharply defined; the costal as well as the abdominal area broadly brown; the outer black border broader, more regular, not interrupted, but with a notch in it near the anal angle. Under surface whiter, with the basal area more dusky. Expanse of wings 2 inches 4 lines.

Hakodaté (*Whitely*).

Catocala esther. (Plate XXXIII. fig. 9.)

Catocala esther, *Butler*, *Cist. Ent.* ii. p. 243. n. 8 (1877).

Allied to *C. consors*, but the primaries blackish, the central band with straight inner edge, whitish, irrorated with testaceous and grey; outer border broadly grey, its inner edge undulated and crossed by an undulated black stripe: secondaries of a clearer orange-colour, with the central band blacker and narrower; outer border blacker and more angular: thorax blackish, whitish in the centre and behind; abdomen clothed with sordid ochraceous scales. Under surface better defined, the borders blacker. Expanse of wings 2 inches 4 lines.

Yokohama (*Jonas*).

Catocala volcanica. (Plate XXXIII. fig. 10.)

Catocala volcanica, *Butler*, *Cist. Ent.* ii. p. 244. n. 9 (1877).

Allied to *C. consors*; considerably larger, but with the black markings on the primaries similar; these wings above slaty grey, densely irrorated with sulphur-yellow, clouded and banded with ferruginous: secondaries bright ochreous, with central and interno-median confluent bands; outer border very broad and black, abruptly constricted near the anal angle, and united to the central band just in front of the constriction, interrupted externally by two ochreous spots, between which are four dots; fringe spotted with blackish: wings below ochreous; primaries crossed by three black belts; outer border brownish, fringe whitish: secondaries crossed by two black bands, the inner one angulated; an abbreviated grey internal dash: pectus whitish; legs speckled with black; tarsi black, banded with whitish; venter yellowish. Expanse of wings 3 inches 2 lines.

Yokohama (*Jonas*); Hakodaté (*Whitely*).

EREBIDÆ.

SYPNA, *Guénée*.

Sypna picta. (Plate XXXIII. fig. 2.)

Sypna picta, *Butler*, *Cist. Ent.* ii. p. 244. n. 1 (1877).

Fuliginous brown; primaries darker than the secondaries; central area paler, crossed by a broad white band, spotted with brown, traversed by blue lines and interrupted in front by a large

costal brown patch, and at the end of the cell by a white-edged brown sigmoidal spot with ochreous centre; outer border pale, especially at apex, black-edged internally; a submarginal series of black dots with white external edges; a pale marginal line, and a second, less distinct, on the fringe: secondaries with broad, darker external border, on which, towards the anal angle, are two ill-defined paler streaks. Under surface pale brown, crossed by two whitish discal streaks; disk beyond these fuliginous, the apical and external angles whitish, speckled with brown; a whitish spot at the end of each discoidal cell; a submarginal series of black dots; antennæ below ferruginous. Expanse of wings 2 inches 1–5 lines.

Hakodaté (*Whitely*); Yokohama (*Jonas*).

Sypna fumosa. (Plate XXXIII. fig. 3.)

Sypna fumosa, *Butler*, *Cist. Ent.* ii. p. 245. n. 3 (1877).

♂. Fuliginous brown; primaries with paler central belt, above which, on the costa, is a small U-shaped bluish marking; a well-marked, broad, irregular, transverse discal band; otherwise much like the preceding species. Expanse of wings 2 inches 1 line.

♂, Yokohama (*Jonas*); ♀, Hakodaté (*Whitely*).

HYPOPYRIDÆ.

SPIRAMA, *Guénée.*

Spirama interlineata. (Plate XXXIV. fig. 2.)

Spirama interlineata, *Butler*, *Ann. & Mag. Nat. Hist.* ser. 5, vol. i. p. 291 (1878).

Allied to *S. rectifasciata*, larger, darker; the white belt of a creamy tint, further from the outer margin, and intersected on the primaries by two parallel brown lines; outer border broader, more sharply defined, its internal yellowish limiting lunules on the secondaries subconfluent. Expanse of wings 2 inches 6 lines.

Yokohama (*Jonas*); Japan (*Fortune*).

HYPOPYRA, *Guénée.*

Hypopyra martha. (Plate XXXIV. fig. 3.)

Hypopyra martha, *Butler*, *Ann. & Mag. Nat. Hist.* ser. 5, vol. i. p. 292 (1878).

Allied to *H. dulcina*, but with shorter primaries; above paler and redder; no oblique streak from the apex of primaries; a well-defined central angulated belt formed by the central grey line and the series of black dots, which in *H. dulcina* touch the pale undulated discal stripe; the latter placed near the submarginal line, which is strongly undulated; only two black dots at

the end of the cell; the belts of secondaries straight; thorax darker; collar redder. Under surface uniformly red, crossed by three equidistant dusky discal stripes; veins, base, and a submarginal series of angular markings brownish. Expanse of wings 3 inches 1 line.

Yokohama (*Jonas*).

OPHIUSIDÆ.

CHRYSORITHRUM, *Butl.*

Chrysorithrum sericeum. (Plate XXXIV. fig. 4.)

Chrysorithrum sericeum, *Butler*, *Ann. & Mag. Nat. Hist.* ser. 5, vol. i. p. 292 (1878).

Smaller and darker than *C. amata*; primaries shining slaty grey; all the markings black, and surrounded by a line of the ground-colour, followed by a black line; the bands somewhat different in shape: secondaries fuliginous brown, darkest on the disk, with a broad, central, tapering, ochreous band, not reaching the anal angle: body dark slaty grey; back of head, collar, and tegulæ blackish. Under surface fuliginous brown, outer border narrowly grey: primaries with a broad subbasal sordid ochreous patch; a pale stramineous discal belt crossed by black nervures: secondaries with the basal third greyish; a central oblique squamose stramineous streak; palpi, tarsi, and the upper surface of the coxæ and femora of the front legs brown. Expanse of wings 2 inches 4 lines.

Yokohama (*Jonas*).

OPHIUSA, *Guénée.*

Ophiusa dulcis. (Plate XXXIV. fig. 5.)

Ophiusa dulcis, *Butler*, *Ann. & Mag. Nat. Hist.* ser. 5, vol. i. p. 293 (1878).

Allied to *O. angularis* of Madagascar, but rather smaller, greyer; the lilacine belt of primaries with parallel margins; the brown belt beyond it narrower, feebly and regularly excavated from the middle to the inner margin, but not sinuate-angulated; apical blackish spots larger and confluent: secondaries with whitish border. Expanse of wings 1 inch 4 lines.

Yokohama (*Jonas*).

EUCLIDIA, *Ochs.*

Euclidia consors. (Plate XXXIV. fig. 6.)

Euclidia consors, *Butler*, *Ann. & Mag Nat. Hist.* ser. 5, vol. i. p. 293 (1878).

Primaries above like *E. cuspidea* of Europe, but paler and with the oblique inner band

formed as in *E. glyphica*: secondaries like *E. glyphica*, but rather darker; the discal band broad and not interrupted, although constricted near the apex; the basal area also complete: wings below ochreous, more or less irrorated with brown, with two discal stripes, the outer one macular on the primaries and interrupted in the centre, the inner one of the secondaries indistinct; dusky lunate discocellular spots to all the wings; marginal line blackish, fringe black-tipped: body somewhat greyish. Expanse of wings 1 inch 5 lines.

Yokohama (*Jonas*).

REMIGIIDÆ.

REMIGIA, *Guénée*.

Remigia annetta. (Plate XXXIV. fig. 7.)

Remigia annetta, *Butler, Ann. & Mag. Nat. Hist.* ser. 5, vol. i. p. 293 (1878).

Above like *R. gregalis*, excepting that the secondaries are greyish brown: under surface altogether paler and yellower: primaries silky grey, with the costal and outer borders ochraceous; fringe grey; limitation of outer border and a parallel line across the disk dark grey: secondaries ochraceous, irrorated with grey; disk crossed by two parallel greyish lines: body below sordid testaceous; palpi and coxæ sordid orange. Expanse of wings 1 inch 10 lines.

Yokohama (*Jonas*); Hakodaté (*Whitely*)

THERMESIIDÆ.

AZAZIA, *Walk.*

Azazia unduligera. (Plate XXXIV. fig. 8.)

Azazia unduligera, *Butler, Ann. & Mag. Nat. Hist.* ser. 5, vol. i. p. 293 (1878).

Wings above greyish brown: primaries crossed by two irregular central dusky lines, indicating a broad band, through which runs a straight dusky streak enclosing the reniform spot, which is indicated by a small whitish spot; two subbasal dusky lines, the outer one almost parallel to the inner central line, the inner one abbreviated; outer border dusky, cut off obliquely at apex by a black litura, which joins a nearly straight yellowish line; a marginal series of black dots: secondaries crossed by a dusky line; outer border crossed by a whitish line; a marginal series of black dots. Under surface paler: wings crossed by two dusky lines, followed by a dusky belt; discocellulars dusky; a whitish line at the base of the fringe: secondaries rather paler; venter pale yellowish. Expanse of wings 1 inch 9 lines.

Yokohama (*Jonas*).

SELENIS, *Guénée.*

Selenis lauta. (Plate XXXIV. fig. 1.)

Selenis lauta, *Butler, Ann. & Mag. Nat. Hist.* ser. 5, vol. i. p. 294 (1878).

Allied to *S. costalis* of Natal: wings above pale cupreous brown; a broad white costal border occupying nearly half the primaries and the basal fifth of the secondaries; two parallel dusky white-edged discal lines; a marginal series of white-edged black dots; fringe grey: secondaries with white costa: head and thorax white; collar dark brown; abdomen pale brown. Under surface sericeous white; primaries sordid towards the costa, with indications of two parallel discal greyish lines; costa near apex marked with three black dots; all the wings with a submarginal series of black dots and grey fringe: body below creamy white. Expanse of wings 8 lines.

Yokohama (*Jonas*).

CAPNODES, *Guénée.*

Capnodes cinerea. (Plate XXXIV. fig. 9.)

Capnodes cinerea, *Butler, Ann. & Mag. Nat. Hist.* ser. 5, vol. i. p. 294 (1878).

♀. Apparently slaty grey, striated with blackish; primaries with the basal two thirds of costa creamy whitish, interrupted by blackish spots and (opposite to the end of the cell) by a ferruginous spot; a similar spot close to the base; a small fulvous spot in the cell; reniform spot fulvous internally, white externally, divided by a black line; apical border pale tawny; fringe alternately sordid white and grey: secondaries with pale costa; fringe as in primaries: body blackish, collar black; prothorax and base of abdomen crossed by white belts. Under surface ferruginous; costa of primaries streaked and spotted with ochreous; a black oval spot in the cell, and a fusiform spot closing it, both bordered with creamy white; fringe as above. Expanse of wings 1 inch 4 lines.

Yokohama (*Jonas*).

Capnodes cremata. (Plate XXXIV. fig. 10.)

Capnodes cremata, *Butler, Ann. & Mag. Nat. Hist.* ser. 5, vol. i. p. 295 (1878).

♀. Shining slaty grey, brown towards the borders, crossed by two central parallel lines of black spots; a discal series of white dots parallel to the outer line, and terminating near the anal angle of secondaries in a white *W*-shaped character; outer margin undulated, black, spotted with white; a continuous series of black crescents on the fringe, which is also blackish externally; costa of primaries irrorated with testaceous, and crossed by four or five angular spots of the same colour; from the outermost spot a zigzag pale greyish black-edged line runs across the disk: secondaries with a discal black-edged macular testaceous line: body greyish brown:

thorax slaty grey. Under surface fuliginous, crossed by two central angulated dusky lines; a pale discal line; outer margin dusky; discocellulars blackish; primaries with three whitish spots on costa towards apex; tarsi black, banded with whitish. Expanse of wings 1 inch 5 lines.

Yokohama (*Jonas*).

URAPTERIDÆ.

URAPTERYX, *Leach.*

Urapteryx delectans, n. sp. (Plate XXXV. fig. 2.)

Wings above greyish brown, covered with darker small round spots; outer border gamboge-yellow; a tawny blotch spotted with black at the extremity of each vein: primaries with the interno-median area tawny, bounded inwardly by an irregular yellow streak; costa broadly whitish; base yellowish: secondaries crossed near the base by a brown-spotted yellow belt; an ill-defined discal flesh-coloured belt and submarginal line; vertex of head and collar white; rest of body greyish, indistinctly banded with sulphur-yellow: wings below silvery grey; a central belt, abbreviated on the primaries, and the outer border mottled with cream-colour; a dentate-sinuated brown discal line which just enters the primaries near the external angle: body whitish; legs brown-speckled. Expanse of wings 2 inches 3 lines.

Yokohama (*Jonas*).

Allied to *U. prætoraria* of Felder.

CHÆRODES, *Guénée.*

Chærodes dictynna, n. sp. (Plate XXXV. fig. 7.)

Wings above pale reddish brown: primaries crossed by three oblique dusky lines, the innermost subangulated, the central one broadest; a black discocellular dot and a black spot on second median interspace; fringe slightly dusky: secondaries crossed by one irregular discal line; subcostal area whitish. Body coloured like the wings, but the thorax rather darker: under surface paler, grey-speckled; the transverse lines obsolete, the black spots ill-defined. Expanse of wings 1 inch 6 lines.

Yokohama (*Jonas*).

LAGYRA, *Walk.*

Lagyra falcigera, n. sp. (Plate XXXV. fig. 4.)

Primaries rosy brown, greyish towards the base; a broad dusky-bordered fuliginous central band; a black discocellular spot; apex filled by a pale subcuneiform costal patch, which is continued as a dusky-edged pale line across the disk, thus limiting the external border, which is

dark and varied with olivaceous: secondaries with the basal half greyish, the costal area testaceous, the externo-anal area ochraceous brown; a dusky-bordered discal pale line: body greyish, pale in front. Under surface sandy yellow, crossed by a tolerably broad central dusky stripe, followed by a slender pale-edged blackish line. Expanse of wings 2 inches 4 lines.

Hakodaté (*Whitely*).

Allied to *L. hamiferata*.

ENNOMIDÆ.

EPIONE, *Duponchel*.

Epione arenosa, n. sp. (Plate XXXV. fig. 1.)

Primaries chocolate-brown, crossed by a broad stramineous oblique central band, which is separated into three large patches by a λ-shaped brown marking, which crosses it; basicostal area broadly mottled with stramineous; a little group of stramineous and white spots near the apex: secondaries stramineous, mottled with brown, the apex and two discal parallel lines also brown: under surface paler and brighter than above; all the wings mottled with ferruginous. Expanse of wings 1 inch 5 lines.

Hakodaté (*Whitely*).

Epione leda, n. sp. (Plate XXXV. fig. 5.)

Wings above fuliginous brown: primaries with a white costal dot above the end of the cell; a large subapical costal white spot, surrounded by a series of white dots; two large external white spots on the median interspaces; below nearly as above. Expanse of wings 1 inch 6 lines.

Yokohama (*Jonas*).

Epione strenioides, n. sp. (Plate XXXV. fig. 6.)

Above black-brown, speckled and spotted with white, the larger spots on the costal and inner borders and external area of primaries, also almost covering the secondaries with the exception of a broad central belt; the external area of all the wings banded and clouded with olivaceous: under surface paler. Expanse of wings 1 inch 8 lines.

Yokohama (*Jonas*).

This species has the general aspect of *Strenia clathrata*.

HYPERYTHRA, *Guénée*.

Hyperythra niphonica, n. sp. (Plate XXXV. fig. 11.)

Whity brown, mottled with grey, especially on the external area, which is limited internally

by a dark grey discal line : primaries with an angular line across the basal third ; a small white discocellular spot. Under surface pale stramineous, with the external area tinted with pink and shining ; otherwise as above. Expanse of wings 1 inch 3 lines.

Hokodaté (*Whitely*).

ELLOPIA, *Treitschke.*

Ellopia formosa, n. sp. (Plate XXXV. fig. 8.)

Rosy greyish, the internal areas mottled with brick-red : primaries with a sulphur-yellow costal streak, expanding in front into a broad clavus, and lobate below ; two apical spots of the same colour : secondaries with the costal area and abdominal border white : head orange ; collar yellow. Under surface silvery white, the yellow markings indistinctly visible. Expanse of wings 1 inch 5 lines.

Yokohama (*Jonas*).

HETEROLOCHA, *Feld.*

Heterolocha debilis, n. sp. (Plate XXXV. fig. 9.)

Pale stramineous : wings crossed by two central oblique slender ferruginous lines, angulated in primaries, the inner one obsolete on secondaries ; the primaries with two costal brown spots at the extremity of the central lines ; costal margin brownish towards apex ; a brown-edged ferruginous cuneiform spot on outer margin just below the apex. Body sordid ; under surface clearer, speckled with brown ; the oblique ferruginous lines thicker : primaries with a ferruginous discocellular stria : body whiter than above. Expanse of wings 1 inch 8 lines.

Hakodaté (*Whitely*).

BIZIA, *Walk.*

Bizia sulphurea, n. sp. (Plate XXXV. fig. 10.)

Bright sulphur-yellow, crossed in the middle by an oblique ferruginous line, followed by a stripe of pinky whitish : primaries with an indistinct angulated squamose reddish stripe across the basal area ; a reddish spot at the end of the cell ; external area clouded with red-brown, darker internally, but not quite reaching the costal margin or external angle : secondaries with whitish costal border ; an apical reddish-brown patch on the external border ; veins terminating in blackish dots : under surface slightly paler, the wings slightly mottled with reddish spots and striations ; external area pale red-brown to near the middle of the secondaries, and then extending as a belt along the lower edge of the central line ; costal margins pinky whitish, spotted with pale reddish brown ; pectus white ; legs and venter creamy yellowish. Expanse of wings 1 inch 10 lines.

Yokohama (*Jonas*).

BOARMIIDÆ.

HEMEROPHILA, *Steph.*

Hemerophila senilis, n. sp. (Plate XXXV. fig. 12.)

Allied to *H. abruptaria* of Europe, but the wings whity brown, narrower; the outer double line of primaries much less irregular, and the pale patch on the outer border of secondaries shorter. Expanse of wings 1 inch 7 lines.

Hakodaté (*Whitely*).

AMPHIDASYS, *Treitschke.*

Amphidasys superans, n. sp. (Plate XXXV. fig. 3.)

Allied to *A. ponderata* of Cochin China, but much larger, grey; the basal area and costal patch at apex redder; the outer line of the primaries blackish, undulated, better defined, that of secondaries further from the inner line; the white zigzag discal line obsolete. Expanse of wings 2 inches 10 lines.

Yokohama (*Jonas*).

BUZURA, *Walk.*

Buzura multipunctaria. (Plate XXXVI. fig. 1.)

Buzura multipunctaria, *Walker, Cat. Lep. Het.* xxvi. p. 1531 (1862).

In coloration similar to *Elphos pardicelata.* Wings and body above white, speckled with black, the wings crossed by two wavy yellow discal belts and with yellow fringe; head, sides of thorax, and margins of abdominal segments yellowish. Under surface white, speckled with grey and black; an ill-defined irregular greyish discal belt and large black discocellular spot on all the wings; pectus and anal tuft yellow; venter and legs whitish, spotted with blackish. Expanse of wings 2 inches 10 lines.

Silhet; Hakodaté (*Whitely*).

ELPHOS, *Guénée.*

Elphos insueta, n. sp. (Plate XXXVI. fig. 2.)

White, speckled with grey, a broad irregular belt limited by the two central sinuated lines, clouded with grey and testaceous; a blackish curved line running through it in the primaries; an irregular grey discal belt, indistinctly blotched with testaceous, across the disk; external area spotted with grey, forming a continuous submarginal belt in the primaries. Body sordid white, banded with grey: under surface clearer than the upper; no testaceous markings: body below creamy white; anterior coxæ greyish. Expanse of wings 3 inches 6 lines.

Yokohama (*Jonas*).

GEOMETRIDÆ.

GEOMETRA, *L.*

Geometra usitata, n. sp. (Plate XXXVI. fig. 3.)

Wings above pale emerald-green; fringe white, yellowish at the base; primaries with white costal border; two transverse straight white lines, the first at basal fourth, the second just beyond the middle: secondaries crossed by a central white line: body snow-white; tegulæ green. Under surface snow-white: primaries with the discoidal cell greenish; the disk, excepting at external angle, bright green, crossed by two divergent green-bordered white stripes; fringe and costa cream-coloured: secondaries with a straight discal green line followed by an angular green stripe, which is narrowed into a line below the third median branch; fringe creamy. Expanse of wings 2 inches 4 lines.

Yokohama (*Jonas*).

JODIS, *Hübn.*

Jodis clarissa, n. sp. (Plate XXXVI. fig. 4.)

Wings above silky white, tinted with sulphur-yellow; primaries crossed by two central divergent grey lines; secondaries crossed by an abbreviated central grey line: body white; head and prothorax sulphur-yellow: primaries below with brown discocellulars; secondaries with the fringe at anal angle bent outwardly, and close to the margin a curved striated fulvous embossed line. Expanse of wings 1 inch 4 lines.

Yokohama (*Jonas*); Hakodaté (*Whitely*).

The embossed oblique striated ridge on the under surface is probably a strigillating apparatus.

THALASSODES, *Guénée.*

Thalassodes prærupta, n. sp. (Plate XXXVI. fig. 5.)

Wings above pale sap-green, crossed by two irregular silvery white lines, the outer line subangulated and zigzag; a silvery white annulus at the end of each discoidal cell; fringe whitish sericeous: body white; vertex of head and prothorax green: under surface without markings; primaries becoming gradually whiter towards the inner margin; secondaries white; body white. Expanse of wings 1 inch 1 line.

Yokohama (*Jonas*).

Thalassodes ambigua, n. sp. (Plate XXXVI. fig. 6.)

Sordid pale sericeous sap-green, with sordid white fringe; primaries with costal margin orange; vertex of head white; thorax greenish; abdomen testaceous, with a dorsal series of blood-red spots: body below testaceous; wings as above. Expanse of wings 1 inch 3 lines.

Yokohama (*Jonas*).

Thalassodes vallata, n. sp. (Plate XXXVI. fig. 9.)

♂. Wings above pale emerald-green, speckled with fawn-colour; a central straight white stripe, white externally and fawn-coloured internally, from costa of primaries to abdominal margin of secondaries; fringe white, with a central purplish-brown line: primaries with white costa dotted with black; a slightly angulated fawn-coloured line across the basal area, and a dot of the same colour at the end of the cell: secondaries with two black spots on the fringe at the extremities of the second and third median branches: body white; head and prothorax greenish. Wings below whiter than above; bands obsolete: body white. Expanse of wings 1 inch 5 lines.

Yokohama (*Jonas*).

THALERA, *Hübn.*

Thalera protrusa, n. sp. (Plate XXXVI. fig. 10.)

♂. Wings above greyish green, with purplish marginal line and lilacine fringe; discocellulars dark: primaries crossed by two divergent undulated white lines; costal margin testaceous: secondaries with a single angulated and undulated white discal line; a well-marked caudate projection at the extremity of the third median branch: body yellowish; crest of head white: wings below altogether paler, without markings; body creamy whitish. Expanse of wings 1 inch 5 lines.

Yokohama (*Jonas*).

The female is larger than the male. This species is allied to "*Thalassodes*" *dissimulata*.

AGATHIA, *Guénée.*

Agathia carissima, n. sp. (Plate XXXVI. fig. 7.)

Wings above bright arsenic-green, with broad pale purplish-brown outer border, striolated with grey and limited internally by an undulated ferruginous-margined brown stripe: primaries with pinky whitish costal border, speckled with grey; a stripe of the same colour across the wing just before the middle; base brown; a green spot and an irregular trifid patch below it near the apex; a small white spot near the middle of outer margin; fringe white, spotted in the middle and at apex with black: secondaries with pale purplish-brown abdominal margin; costa whitish: body green. Under surface considerably paler, the brown markings more purple-tinted. Expanse of wings 1 inch 6 lines.

Yokohama (*Jonas*); Hakodaté (*Whitely*).

ARACIMA, n. gen.*

Allied to *Agathia*, but the antennæ shorter, rather broadly pectinated in the male; the outer margin of all the wings regularly sinuated; the discocellulars of secondaries more strongly angulated. Type *A. muscosa.*

* *Thalassodes cœlataria* and *Macaria vagata* may be referred to this genus.

Aracima muscosa, n. sp. (Platc XXXVI. fig. 8.)

Above greenish testaceous: wings with a broad external brown border, not reaching the apex of primaries; these wings with black-dotted costal margin; a large discocellular spot, a stripe below it, a spot on the subcostal vein at the middle of the cell, and a second just before its terminal furca brown: secondaries with a large brown discocellular spot and a costal patch of the same colour just beyond it; costal area whitish. Under surface bright yellow, with white internal borders; brown markings of the upper surface replaced by rust-red, and edged with orange: body below whitish; legs testaceous. Expanse of wings 1 inch 9 lines.

Yokohama (*Jonas*).

EPHYRIDÆ.

EPHYRA, *Duponchel.*

Ephyra splendens, n. sp. (Plate XXXVII. fig. 1.)

Primaries above sericeous creamy white, crossed by zigzag mustard-yellow stripes; internal area, excepting at external angle, and a zigzag discal band not reaching the costal margin, grey, crossed by black lines: secondaries with the basal half grey, crossed by zigzag black stripes; external half creamy white, crossed by two zigzag mustard-yellow stripes: body dark grey, with white anus: wings below white, with greyish areas nearly as above; body white. Expanse of wings 10 lines.

Yokohama (*Jonas*).

Allied to *E. albiocellaria.*

ACIDALIIDÆ.

ACIDALIA, *Treitschke.*

Acidalia unistirpis, n. sp. (Plate XXXVII. fig. 7.)

Very similar in character to *A. moniliata,* but much larger, stramineous, with numerous additional parallel brown lines; the discal line darker, more angular, followed by a series of confluent, slightly paler spots, bounded by an undulated brown line; the whitish submarginal spots conical, those of the primaries upon a brown ground; discocellular spots rounded and black. Expanse of wings 1 inch 3 lines.

Yokohama (*Jonas*); Hakodaté (*Whitely*).

Acidalia steganioides, n. sp. (Plate XXXVII. fig. 8.)

Much like a *Stegania* in marking: wings above with the basal two fifths white, external three fifths pale rust-red; the white area limited by a straight purplish-brown line, immediatcly

followed by a similar squamose line; a very irregular externo-discal line, blackish in primaries, ferruginous in secondaries; outer margin very slenderly blackish; fringe dull rosy lilacine, with a broad central blackish belt: primaries with black discocellular dot; apical area whitish; a zigzag subbasal brown line; external area between the median branches greyish; costal margin purplish: body sordid white; head purplish; abdomen with central grey bands. Under surface testaceous, markings as above. Expanse of wings 1 inch 1 line.

Yokohama (*Jonas*).

ARGYRIS, *Guénée.*

Argyris superba, n. sp. (Plate XXXVII. fig. 2.)

Above snow-white, with a submarginal series of large grey spots: primaries with a dark grey costal spot at basal third and a second opposite to it on the inner margin; a third spot on the costa at apical third; a large oval brownish testaceous patch across the median branches, its centre brownish flesh-coloured, with the veins which cross it black externally and white internally, a white line along its inner border, whence a similarly coloured angular marking runs downwards to the inner margin: secondaries crossed by two double grey lines, the inner one towards the base indistinct. Underside white, immaculate. Expanse of wings 1 inch 11 lines.

Yokohama (*Jonas*).

In appearance most like *Auzata pavonaria* of Walker.

ZERENIDÆ.

EREBOMORPHA, *Walker.*

Erebomorpha consors, n. sp. (Plate XXXVII. fig. 3.)

Nearly allied to *E. fulguraria* from Darjeeling, but differing from it in its much smaller size and the far wider white belts across the wings. Expanse of wings 2 inches 10 lines.

Hakodaté (*Whitely*); Yokohama (*Jonas*).

The genus *Erebomorpha* is allied to "*Abraxas*" *compositata.*

ABRAXAS, *Leach.*

Abraxas whitelyi, n. sp. (Plate XXXVII. fig. 4.)

Above white, the basal half crossed by three dark brown bands, which are broken up into irregular spots, the outermost band double; two apical costal spots and two submarginal series, those of the outer series confluent towards apex; outer border narrowly orange; fringe yellowish, black-spotted: secondaries with costal and discocellular spots, an arched series of dots across the median branches, three or four discal spots towards anal angle, a submarginal series and a series

on the fringe blackish; outer border orange, especially at anal angle: body whitish, black-spotted. Under surface nearly as above, but the spots more numerous and better defined. Expanse of wings 1 inch 8 lines.

Hakodaté (*Whitely*).

Abraxas junctilineata. (Plate XXXVII. fig. 5.)

Abraxas junctilineata, *Walker*, *Cat. Lep. Het.* xxiv. p. 1123. n. 18 (1862).

White: primaries crossed by thirteen black lines, and half crossed at apex by two more; these lines are arranged in twos and threes so as to leave four irregular white bands between them; margin and two black spots at external angle black: secondaries with a blackish basal spot; a black discocellular spot; an irregular series of large subconfluent black spots across the disk; an apical litura, four submarginal spots, the margin, and a series of spots on the fringe black; anal border broadly orange: body ochreous, abdomen crossed by interrupted black belts. Under surface with fewer but broader belts; all the wings with large discocellular spots: secondaries with the basal half of costa black, a central irregular transverse band running from it to the abdominal margin; discal spots separate: body ochreous, black-spotted. Expanse of wings 2 inches.

North China (*Fortune*); Yokohama (*Jonas*).

Abraxas elegans, n. sp. (Plate XXXVII. fig. 6.)

White, the wings black-spotted, the primaries crossed by six series of spots, all but the fourth series (in which the spots are small) more or less confluent: secondaries with a discocellular spot, two on abdominal margin, one, small, near the base of the median vein, several on the costa; a discal series of large spots, twice interrupted, four smaller submarginal spots, and a marginal series: body ochreous, black-spotted. Wings below nearly as above, but the spots broader and therefore more completely confluent: body below ochreous; anterior legs and coxæ black. Expanse of wings 2 inches 2 lines.

Yokohama (*Jonas*).

RHYPARIA, *Hübn.*

Rhyparia fraterna, n. sp. (Plate XXXVII. fig. 9.)

Closely allied to *R. melanaria* of Europe, but half as large again, the primaries with the series of black spots more crowded together, leaving broad white bands between the basal, central, and submarginal series: secondaries with the spots larger and therefore forming three well-defined series in addition to the discocellular spot. Expanse of wings 2 inches 1 line.

Yokohama (*Jonas* and *Pryer*).

LARENTIDÆ.

SCOTOSIA, *Steph.*

Scotosia lucicolens, n. sp. (Plate XXXVII. fig. 10.)

Allied to *S. miniosata* of India, but larger, the primaries more acuminate, bronzy, with the black lines sharply defined; the secondaries with no apical orange patch, but with a testaceous border to the apical margin; a broad whitish costal patch from the margin almost to the median vein; under surface shining cream-coloured, the base not grey. Expanse of wings 2 inches 3 lines.

Yokohama (*Jonas*); Hakodaté (*Whitely*).

PLATYDIIDÆ.

PLATYDIA, *Guénée.*

Platydia casta, n. sp. (Plate XXXVIII. fig. 1.)

Wings above pale fuliginous brown: primaries with a central oblique irregular band, bordered by a double black line, and tinted with lilacine; base filled by a brownish spot bordered in the same way; subbasal and discal areas varied with pale spots, edged with yellowish silver; reniform spot on the central band outlined in black, and with a silvery margin; a sinuated subconical white-bordered marginal brown patch; an apical whitish lilacine spot, above which the fringe is white; fringe of outer margin brown, white-tipped; inner margin, below the central band, with a projecting conical patch of elongated scales: secondaries with a dark marginal line; fringe whitish: body pearly whitish; abdomen with a dorsal series of brown dots. Wings below pale brown; primaries greyish in the centre: body testaceous. Expanse of wings 1 inch 5 lines.

Yokohama (*Jonas*).

HYPENIDÆ.

DICHROMIA, *Guénée.*

Dichromia claripennis, n. sp. (Plate XXXVIII. fig. 2.)

Primaries above chocolate-brown, the costal area darker and sprinkled with grey scales; a broad nearly straight discal belt densely sprinkled with grey scales; apex with a pale grey-sprinkled costal patch; fringe blackish, traversed by two very slender parallel whitish lines: secondaries ochreous, with a slender brown marginal line; fringe grey: thorax grey; abdomen

deep ochreous: primaries below greyish, ochraceous externally; pectus sordid whitish; legs greyish; venter sordid ochreous. Expanse of wings 1 inch 2 lines.

Yokohama (*Jonas*).

Dichromia amica, n. sp. (Plate XXXVIII. fig. 3.)

Allied to *T. triplicalis*; it differs from the preceding species in its darker primaries, with a sprinkling of grey scales on the external area, also in the broad smoky-brown border of the secondaries, which are, moreover, sordid towards the base, and the brown abdomen. Expanse of wings 1 inch 4 lines.

Yokohama (*Jonas*); Hakodaté (*Whitely*).

HYPENA, *Schrank.*

Hypena vigens, n. sp. (Plate XXXVIII. fig. 4.)

Nearly allied to the Indian *H. abducalis*, but more sericeous, the oblique belt less sharply defined, with white instead of creamy edges; the four discal lines wider apart; fringe of primaries with three slender parallel blackish lines, of secondaries with two very pale subconfluent grey lines. Expanse of wings 1 inch 5 lines.

Yokohama (*Jonas*).

Hypena ella, n. sp. (Plate XXXVIII. fig. 5.)

Allied to *H. velatipennis* from Natal, but the primaries redder, the central transverse line pale blue instead of yellowish, the external area (excepting the spots, which are black or blackish in *H. velatipennis*) sprinkled with blue scales. Expanse of wings 1 inch 2 lines.

Yokohama (*Jonas*).

Hypena stygiana, n. sp. (Plate XXXVIII. fig. 6.)

Wings above fuliginous brown: primaries crossed from basal fourth by a very broad white-edged blackish band, its inner edge zigzag, its outer edge almost bracket-shaped; an oblique dusky apical dash and indications of a series of discal spots; a slender interrupted blackish marginal line: under surface pale greyish brown; secondaries with a black discocellular spot. Expanse of wings 1 inch 5 lines.

Yokohama (*Jonas*).

Hypena columbaris, n. sp. (Plate XXXVIII. fig. 7.)

Upper surface pale brown, washed with lilacine grey; primaries with an indication of markings as in *H. abducalis*; secondaries with white fringe. Expanse of wings 1 inch 3 lines.

Yokohama (*Jonas*).

Apparently allied to *H. vigens*, but differing entirely in the form of the palpi.

GABALA, *Walker.*

Gabala argentata, n. sp. (Plate XXXIX. fig. 3.)

Primaries rust-red, paler beyond the middle, the basal two fifths and a semicircular costal patch at apex covered with silver spots; secondaries snow-white, slightly tawny at the centre of the outer margin; thorax silvery, reticulated with rust-red; abdomen sordid white: under surface entirely silvery white. Expanse of wings 1 inch 1 line.

Yokohama (*Jonas*).

HERMINIIDÆ.

HERMINIA, *Latr.*

Herminia arenosa, n. sp. (Plate XXXVIII. fig. 8.)

Nearly allied to *H. tarsicrinalis* of Europe, but of a more sandy tint, with the primaries more uniform in tint; the second of the three transverse brown lines nearer to the first, and consequently further from the third; secondaries with the basal area slightly darker, and the central line better defined. Expanse of wings 1 inch 3 lines.

Yokohama (*Jonas*).

BOCANA, *Walker.*

Bocana niphona, n. sp. (Plate XXXVIII. fig. 9.)

Nearly allied to *B. turpatalis* of Ceylon, but much larger: the primaries with the two dusky lines of the central area indistinct and considerably straighter; the discal line quite straight, testaceous; costal margin slenderly bright orange: secondaries greyish, the inner line obsolete. Expanse of wings 1 inch 7 lines.

Yokohama (*Jonas*).

PYRALIDÆ.

GLOSSINA, *Guénée.*

Glossina achatina, n. sp. (Plate XXXVIII. fig. 10.)

Primaries sordid white, clouded with olivaceous, and with a central longitudinal reddish streak; two irregular central black lines, wide apart on the inner margin, but converging towards the costa; only a white line between the outer black line and the external area, which is brown, blackish internally, and with a marginal series of black spots: secondaries smoky brown, with indications of paler irregular discal and submarginal streaks: thorax white; head

and abdomen testaceous: under surface pale shining greyish brown, with pale-bordered dusky angulated discal belt; primaries with a dusky discocellular spot. Body below white. Expanse of wings 1 inch 3 lines.

Yokohama (*Jonas*).

ASOPHIDÆ.

HYMENIA, *Hübn.*

Hymenia erebina, n. sp. (Plate XXXIX. fig. 1.)

Wings above purplish brown, with very slender submarginal whitish lines; primaries crossed by two creamy white lines, the inner one near the base, angulated and interrupted, the outer one extremely irregular, expanding into a large white spot on the costal area, and forming a white crescent at the first median branch; discoidal spots black, with a quadrate white spot between them; fringe black, with a white patch at external angle: secondaries with the costa whitish; discoidal cell whitish, crossed by two large black spots; an angulated creamy white central band; fringe white, with central and anal black patches: under surface paler, sericeous; body white. Expanse of wings 1 inch.

Yokohama (*Jonas*).

Allied to "*Ebulea*" *zelleri* of Bremer.

MARGARODIDÆ.

GLYPHODES, *Guénée.*

Glyphodes sylpharis, n. sp. (Plate XXXIX. fig. 2.)

Near to *G. sibillalis* from St. Domingo, but smaller, the hyaline white bands of primaries narrower and longer, not interrupted near the inner margin; the secondaries with the outer border much broader and of a greyer tint. Expanse of wings 11 lines.

Yokohama (*Jonas*).

MARGARONIA, *Hübn.*

Margaronia neomera, n. sp. (Plate XXXIX. fig. 5.)

Pearly white; wings with a marginal series of black dots; the primaries with dark copper-brown costa, two black subcostal dots in the cell, two more at the end of the cell, and one at the end of the cell of secondaries; palpi testaceous. Expanse of wings 1 inch 3 lines.

Yokohama (*Jonas*).

Only differs from *M. isoscelalis* of the Amazons in the deeper colour of the costal border of primaries and the paler tint of its palpi.

BOTIDIDÆ.

BOTYS, *Latr.*

Botys jessica, n. sp. (Plate XXXIX. fig. 6.)

Primaries semihyaline, pale stramineous, crossed by two slender divergent pale brown lines, the inner one angulated, the outer one zigzag; a dot of the same colour at the end of the cell: secondaries much paler, almost white; the disk crossed by two parallel pale brown lines, the outer one indistinct and broken up into spots; thorax stramineous; abdomen testaceous, with white margins to the segments; under surface paler, the body white. Expanse of wings 1 inch 2 lines.

Yokohama (*Jonas*).

Botys protensa, n. sp. (Plate XXXIX. fig. 7.)

Wings semihyaline, pearly white: primaries crossed by three grey lines, the first near the base angulated, the other two parallel to the outer margin, dentated; a grey discocellular litura; costa greyish: secondaries crossed by two dentated grey lines parallel to the outer margin: body white; palpi, antennæ, and prothorax testaceous. Expanse of wings 1 inch 1 line.

Yokohama (*Jonas*).

Near to the "*Aglossa*" *exsucealis* of Lederer; it is also allied to *Botys repandalis* of Europe. This and the following appear to belong to the section to which the name of *Nomis* has been given.

Botys chlorophanta, n. sp. (Plate XXXIX. fig. 8.)

Semihyaline, golden, the primaries crossed by two pale brownish lines, the outer line extremely irregular; a dark brown discocellular litura: secondaries with a single irregular brownish line; a dark brown discocellular dot; all the wings with a dark brown marginal line and snow-white fringe: body golden; metathorax and segmental margins of the abdomen white; below altogether paler, immaculate. Expanse of wings 1 inch 1 line.

Yokohama (*Jonas*).

Allied to *B. inanitalis* of Lederer.

EBULEA, *Guénée.*

Ebulea aurorina, n. sp. (Plate XXXIX. fig. 9.)

Bright ochreous; wings with broad rosy borders: primaries crossed by two dark rosy lines, the outer one very irregular; a discocellular lunule and discoidal dot of the same colour: secon-

daries with one irregular discal line and a discocellular spot: wings below considerably paler with grey borders; palpi ochreous; legs silvery; anterior tibiæ ochreous, with a silvery spot. Expanse of wings 11 lines.

Yokohama (*Jonas*).

Allied to *E. rubiginalis* of Europe.

PIONEA, *Guénée.*

Pionea sodalis, n. sp. (Plate XXXIX. fig. 4.)

Allied to *P. forficalis* of Europe, but larger; the primaries more tawny, the oblique lines wider apart; the marginal line undulated; the fringe tawny tipped with grey, and with a central grey line: secondaries with wider fringe; a brown discal line and a slender interrupted black marginal line: body darker. Expanse of wings 1 inch 3 lines.

Yokohama (*Jonas*).

CROCIDOPHORA, *Lederer.*

Crocidophora pantherata, n. sp. (Plate XXXIX. fig. 10.)

Wings above pale pinky brown, with a regular black-edged tawny submarginal belt; margin slenderly black, fringe grey: primaries with outer half of the discoidal cell tawny, crossed by a semihyaline black-edged pale yellowish spot; three black spots at the base, followed by a black stripe across the wing; a bifid black spot across the internal area; a large subapical patch with a black edge, and crossed transversely by an angulated black discal stripe: secondaries with a black discoidal dot and discocellular litura; an irregular interrupted discal black line. Under surface altogether pale greyish. Expanse of wings 1 inch 1 line.

Yokohama (*Jonas*).

ÆGERIIDÆ*.

SPHECIA, *Hübn.*

Sphecia contaminata, n. sp. (Plate XL. fig. 2.)

Wings hyaline, slightly tinted with testaceous, veins and borders black; primaries with the costal and inner margins and discocellular spot streaked with red; secondaries with a yellow discocellular spot: body black; frons white; palpi, collar, a spot on each shoulder, a crescent-like line on the metathorax, a broad band across the abdomen, and the edge of the basal segment

* This family is connected with the *Pyrales* through *Arauzona*, *Acridura*, and *Erilusa*, and with the *Tineites* through *Tinægeria* and *Exodomorpha*.

yellow; legs black, varied with orange and yellow; venter black, with yellow edges to the segments. Expanse of wings 1 inch 6 lines.

Yokohama (*Jonas*).

Allied to *S. sinensis* of Walker.

SCIAPTERON, *Staud.*

Sciapteron regale, n. sp. (Plate XL. fig. 3.)

Primaries purple, streaked with cupreous: secondaries hyaline white, with pearly reflections; veins black; discocellulars and margin cupreous; fringe purple: body black; the head, front of collar, shoulders, two longitudinal thoracic stripes, and three abdominal belts orange: primaries below with the basal two thirds of the costal area orange; the rest of the wing brighter than above, but similar: secondaries with the margin and veins bright coppery-orange: body below purplish black, the pectus and legs spotted with orange, the venter with one orange belt. Expanse of wings 1 inch 6 lines.

Yokohama (*Jonas*).

Allied to *S. bicincta*.

ÆGERIA, *Fabr.*

Ægeria hector, n. sp. (Plate XL. fig. 4.)

Wings hyaline white, with black veins and purplish-black borders: primaries with broad outer border and large discocellular spot; internal area yellowish. Body steel-black; abdomen with two basal spots and two narrow belts near the extremity sulphur-yellow; anal tuft edged with ochraceous: under surface with the costal margins of the wings, palpi, anterior coxæ, two spots at the base of abdomen, and two broad subconfluent abdominal belts sulphur-yellow; legs blue-black with golden tibiæ, posterior pair with golden spines. Expanse of wings 1 inch 4 lines.

Yokohama (*Jonas*).

Allied to *Æ. andrenæformis*.

Ægeria tenuis, n. sp. (Plate XL. fig. 8.)

Wings hyaline white, with black veins and borders: body steel-black; collar and two slender abdominal bands silvery white: wings below with bronze costal margins; palpi, collar, front coxæ, sides of pectus, basal segment of abdomen, and a ventral belt silvery white. Expanse of wings 10 lines.

Yokohama (*Jonas*).

Allied to *Æ. annellata* of Zeller.

TINTHIA, *Walker.*

Tinthia editha, n. sp. (Plate XL. fig. 9.)

Primaries chocolate-brown; a longitudinal abbreviated line at the end of the cell and two or three discal dots hyaline white: secondaries hyaline white, with brown veins and borders; internal border yellowish: body brown; abdomen with lateral basal streak. Under surface with the margins of the wings and the whole of the body golden; legs golden, banded with black. Expanse of wings 11 lines.

Yokohama (*Jonas*).

Tinthia constricta, n. sp. (Plate XL. fig. 10.)

Primaries purplish black, with a longitudinal line and a quadrifid discal patch hyaline white; fringe brown: secondaries hyaline white, with black veins and margins; fringe brown: body purplish black; abdomen with two central slender belts and the middle of the anal tuft golden: primaries below with golden costal margin; legs streaked with gold; palpi whitish; pectus spotted with silver; venter banded with silver. Expanse of wings 9 lines.

Yokohama (*Jonas*).

CRAMBIDÆ.

CHILO, *Zincken.*

Chilo acuminatus, n. sp. (Plate XL. fig. 1.)

Primaries pale testaceous, with white veins and a longitudinal brown streak; a few black spots and scales scattered over the submedian area; secondaries silvery white; thorax testaceous; abdomen paler: under surface entirely silvery white. Expanse of wings 1 inch 1 line.

Yokohama (*Jonas*).

CRAMBUS, *Fabr.*

Crambus argyrophorus, n. sp. (Plate XL. fig. 5.)

Allied to *C. hamellus*, but smaller; the head, palpi, and prothorax white: primaries with the silvery white streak of double the width; the discal line less angulated and nearer the margin, the white-edged blackish apical patch wanting. Expanse of wings 1 inch 4 lines.

Yokohama (*Jonas*).

NYCTEOLIDÆ.

CONCHYLIS, *Treitschke.*

Conchylis dives, n. sp. (Plate XL. fig. 7.)

Primaries above buff-coloured; the basal two fifths of costa, a curved streak from the latter,

an internal abbreviated streak, two large central spots (brown-edged externally), a dot on the costa near apex, a large subapical spot and two submarginal spots below it metallic silver; margin pale; fringe white: secondaries black-brown; a whitish line close to the margin; fringe white; thorax buff; abdomen brown: under surface brown, with whitish fringe. Expanse of wings 8 lines.

Yokohama (*Jonas*).

Allied to *C. dipoltella*.

TINEIDÆ.

ADELA, *Latr.*

Adela optima, n. sp. (Plate XL. fig. 6.)

Primaries above brilliant metallic golden; base of costa, two oblique belts, a costal spot closing the cell, and the disk rosy cupreous, edged with black: secondaries shining bronzy brown: body brown: under surface paler than the upper, but with similar markings. Expanse of wings 8½ lines.

Yokohama (*Jonas*).

R M del A Searle lith

Mintern Bros imp.

1. Macroglossa saga.
2. Hemaris radians.
3. Hemaris alternata.
4. Triptogon piceipennis.
5. Pergesa mongoliana.
6. Hyloicus caligineus.
7. Northia tenuis.
8. Procris esmeralda.
9. Zygæna niphona.

R. M. del. A. Searle lith. — Mintern Bros imp.

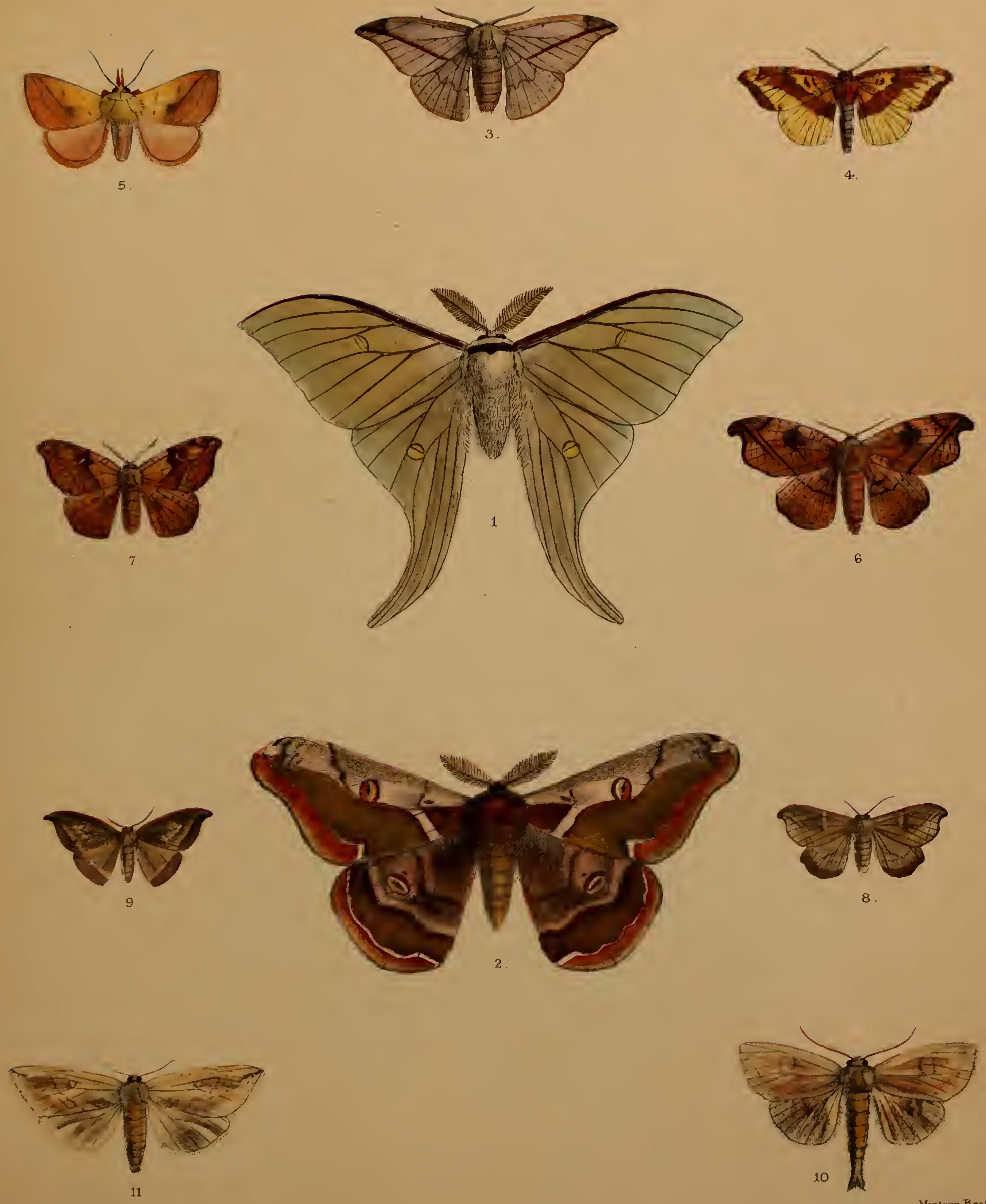
1. Seudyra noctuina.
2. Mimeusemia persimilis.
3. Vithora agrionides.
4. Spilarctia imparilis.
5. Melanæma venata.
6. Miltochrista pulchra.
7. Miltochrista aberrans.
8. Miltochrista rosaria.
9. Æmene fasciata.
10. Miltochrista calamina.
11. Œonistis dives.
12. Lithosia lævis.

R. Mintern del. et lith. Mintern Bros imp.

1. Eugoa grisea.
2. Rhyparioides nebulosa.
3. Diacrisia subvaria.
4. Pterodecta gloriosa.
5. Lithosia pavescens.
6. Lithosia adaucta.
7. Psychostrophia melanargia.
8. Psychogoës aterrima.
9. Pidorus atratus.
10. Laurion remota.
11. Aroa jonasii.
12. Artaxa intensa.

R. Mintern del et lith. Mintern Bros imp.

1. Leucoma auripes.
2. Gelastocera exusta.
3. Dicranura felina.
4. Lymantria fumida.
5. Lymantria aurora.
6. Peridea gigantea.
7. Hupodonta corticalis.
8. Dasychira lunulata.
9. Phalera sigmata.



R. Mintern del et lith.

Mintern Bros imp.

1. Tropæa gnoma.
2. Caligula jonasii.
3. Hypsomadius insignis.
4. Oreta calceolaria.
5. Monema flavescens.
6. Oreta calida.
7. Oreta pulchripes.
8. Oreta turpis.
9. Drepana scabiosa.
10, 11. Bireta pallida.

R. Mintern del et lith

Mintern Bros imp.

1. Rhodia fugax. 3. Brahmæa japonica. 6, 7. Œona segregata.
2. Caligula japonica. 4, 5. Odonestis excellens.

H. Mintern. del. et lith.

Mintern Bros imp.

1. Trabala cristata.
2. Gonoclostera latipennis.
3. Odonestis spectabilis.
4. Odonestis superans.
5. Apha tychoona.
6 Cifuna locuples.
7. Hepialus excrescens.
8. Hepialus æmulus.

R. Mintern del. et lith.

Mintern Bros imp.

1. Cymatophora ampliata.
2. Cymatophora octogesima.
3. Micardia argentata.
4. Micardia pulchra.
5. Mythimna placida.
6. Mythimna rufipennis.
7. Mythimna grandis.
8. Mythimna divergens.
9. Ochria fortis.
10. Leucania salebrosa.
11. Leucania singularis.

R.M. del. A.H. Searle lith. Mintern Bros. imp.

1. Gortyna acuminata.
2. Xylophasia sodalis.
3. Apamea conciliata.
4. Miana vulnerata.
5. Miana segregata.
6. Amyna stellata.
7. Radinacra palpalis.
8. Spælotis nitens.
9. Agrotis ingrata.
10. Agrotis ustulata.
11. Graphiphora exusta.

R.M. del. A.H. Searle lith.

Mintern Bros. imp.

1. Graphiphora canescens. 4. Semiophora pallescens. 7. Tæniocampa ella.
2. Graphiphora pacifica. 5. Tæniocampa tabida. 8. Orthosia lizetta.
3. Ochropleura stupenda. 6. Tæniocampa carnipennis. 9. Eupsilia tripunctata.
10. Hoporina sericea. 11. Brachyxanthia peculiaris.

R Mintern del. E. A. Searle lith.

Mintern Bros imp.

1. Mesogona contracta.
2. Cosmia distincta.
3. Plataplecta subviridis.
4. Anthophila paradisea.
5. Raphia fasciata.
6. Xylina pruinosa.
7. Hadena gnoma.
8. Calocampa fumosa.
9. Calocampa formosa.
10. Plusia typinota.
11. Plusia purissima.

R. Mintern del. A. Searle lith.

Mintern Bros imp.

1. Calpe excavata.
2. Calpe sodalis.
3. Gonitis commoda.
4. Amphipyra tripartita.
5. Mormo mucivirens.
6. Orthogonia crispina.
7. Perinænia lignosa.
8. Toxocampa lilacina.
9. Toxocampa enormis.

R. Mintern del. A. Searle lith.

Mintern Bros. imp.

1, Triphænopsis lucilla.
2, Sypna picta.
3, Sypna fumosa.
4, Catocala nivea.
5, Catocala ella.
6, Catocala jonasii.
7, Catocala mirifica.
8, Catocala xarippe.
9, Catocala esther.
10, Catocala volcanica.

R.Mintern del E.A.Searle lith. Mintern Bros imp

1. Selenis lauta.
2. Spirama interlineata.
3. Hypopyra martha.
4. Chrysorithrum sericeum.
5. Ophiusa dulcis.
6. Euclidia consors.
7. Remigia annetta.
8. Azazia unduligera.
9. Capnodes cinerea.
10. Capnodes cremata.

R. Mintern del. A. Searle lith.

Mintern Bros imp.

1. Epione arenosa.
2. Urapteryx delectans.
3. Amphidasys superans.
4. Lagyra falcigera.
5. Epione leda.
6. Epione strenioides.
7. Chærodes dictynna.
8. Ellopia formosa.
9. Heterolocha debilis.
10. Bizia sulphurea.
11. Hyperythra niphonica.
12. Hemerophila senilis.

R. Mintern del. A. Searle, lith.

Mintern Bros imp.

1. Buzura multipunctaria.
2. Elphos insueta.
3. Geometra usitata.
4. Jodis clarissa.
5. Thalassodes prærupta.
6. Thalassodes ambigua.
7. Agathia carissima.
8. Aracima muscosa.
9. Thalassodes vallata.
10. Thalera protrusa.

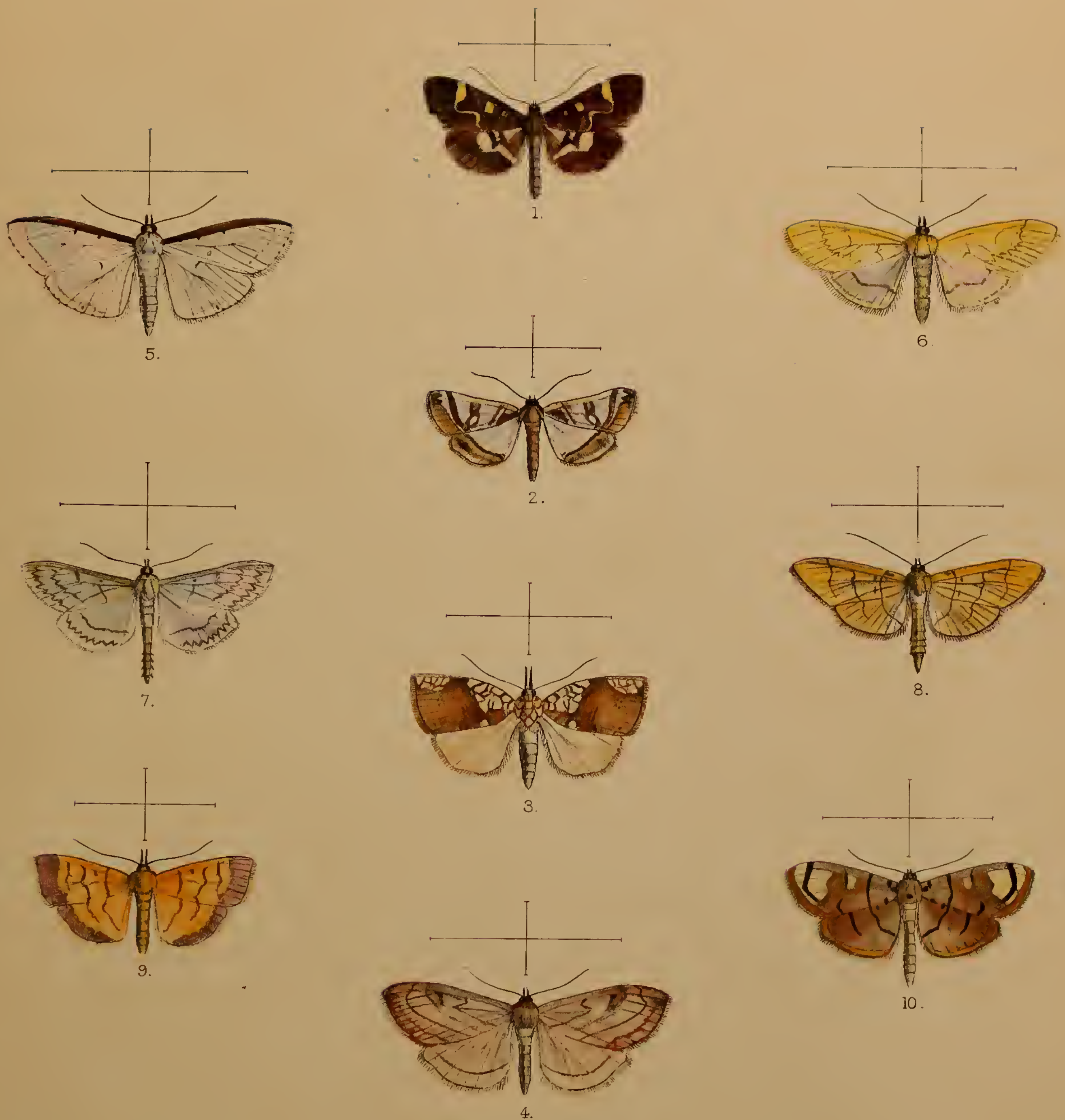
R. Mintern del. A. H. Searle lith.

Mintern Bros imp.

1. Ephyra splendens.
2. Argyris superba.
3. Erebomorpha consors.
4. Abraxas whitelyi.
5. Abraxas junctilineata.
6. Abraxas elegans.
7. Acidalia unistirpis
8. Acidalia steganioides
9. Icterodes fraterna.
10. Scotosia lucicolens.

R. Mintern del. A.H. Searle lith. Mintern Bros imp.

1. Platydia casta.
2. Dichromia claripennis
3. Dichromia amica.
4. Hypena vigens.
5. Hypena ella.
6. Hypena stygiana.
7. Hypena columbaris.
8. Herminia arenosa.
9. Bocana niphona.
10. Glossina achatina.



R. Mintern del. A. H. Searle lith.

Mintern Bros. imp.

1. Hymenia erebina.
2. Glyphodes sylpharis.
3. Gabala argentata.
4. Pionea sodalis.
5. Margaronia neomera.
6. Botys jessica.
7. Botys protensa.
8. Botys chlorophanta.
9. Ebulea aurorina.
10. Crocidophora pantherata.

1. 2. 3. 4. 5. 6. 7. 8. 9. 10.

R Mintern del. A.H. Searle lith

Mintern Bros imp.

1. Chilo acuminatus.
2. Sphecia contaminata.
3. Sciapteron regale.
4. Ægeria hector.
5. Crambus argyrophorus.
6. Adela optima.
7. Conchylis dives.
8. Ægeria tenuis.
9. Tinthia editha.
10. Tinthia constricta.